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Construction Methods

JULY 1947

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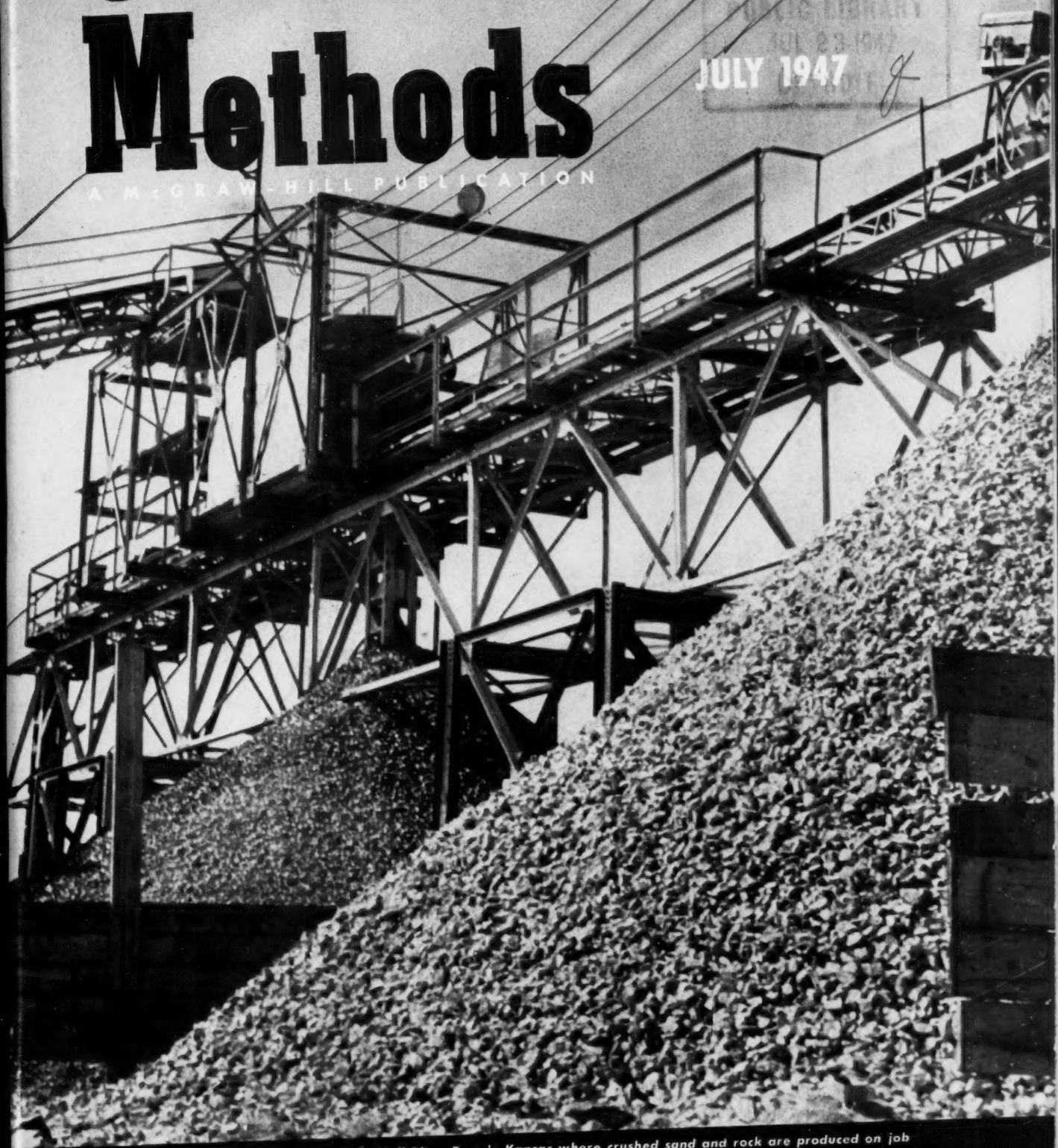
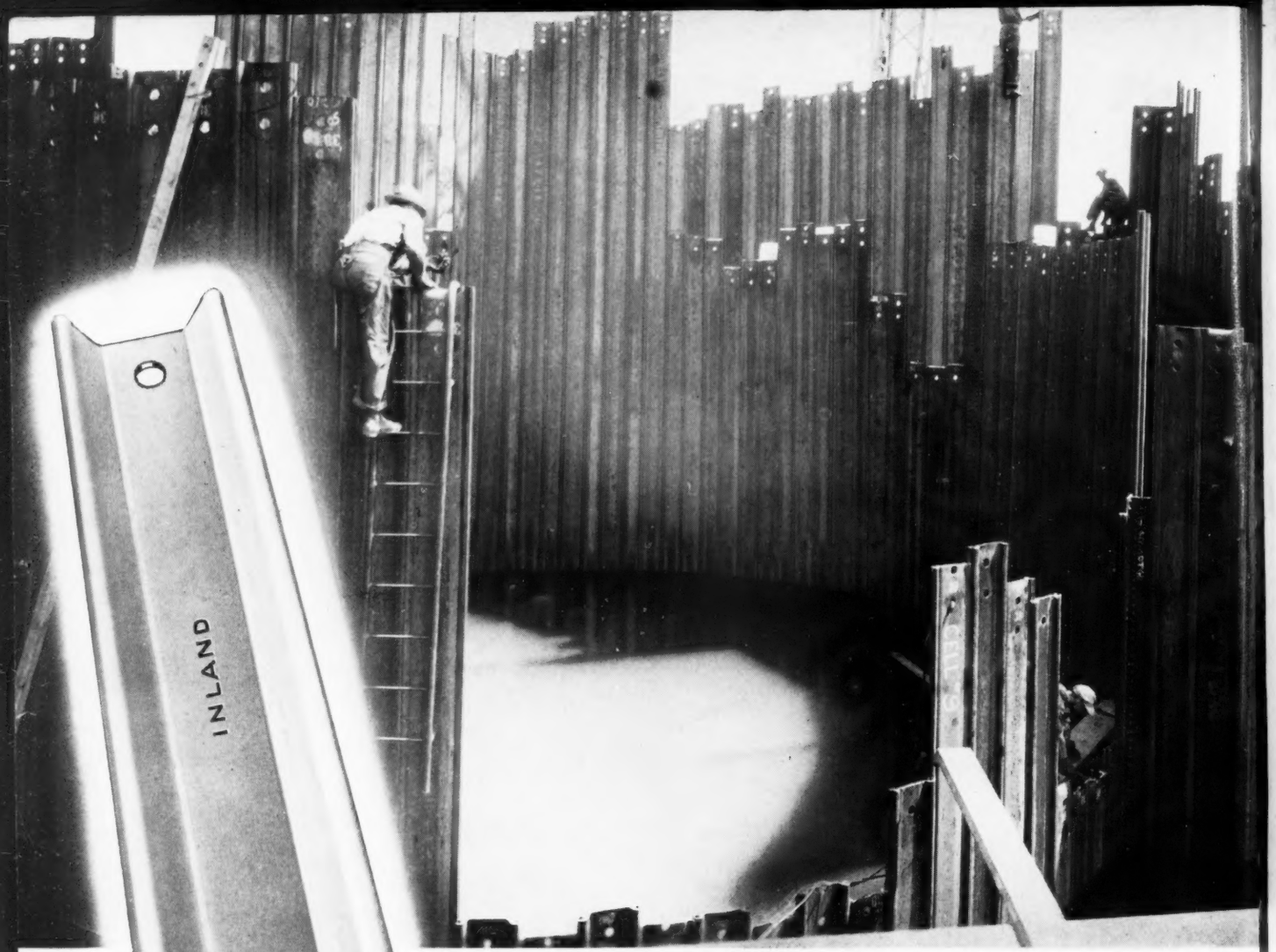


Stackers of big aggregate plant at Fall River Dam in Kansas where crushed sand and rock are produced on job



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Construction Methods

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THE CONSTRUCTION MAGAZINE WITH PICTURE POWER

Established 1919

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JULY 1947 Volume 29 • Number 7

CUTS AND FILLS

MARK YOUR CALENDAR right now for a trip to Chicago Oct. 7 and 8 to attend the construction sessions of the National Safety Congress at the Stevens Hotel. An interesting and informative program has been arranged with prominent contractors taking part. The symposium on how much you can afford to spend to prevent accidents, scheduled for Oct. 8 and headed by Dwight W. Winkelman, will be worth the trip alone. Other attractive features make this a must session for all cost and safety conscious construction men.

CONSTRUCTION AT WAR is vividly portrayed by a new book "American Miracle" (Odyssey Press, New York, $4.00) written by Van Rensselaer Sill under sponsorship of The A.G.C. In well-written, easy-reading manner the author covers domestic camp and industrial construction and shipbuilding and also construction and other activities of the Seabees and Army Engineers overseas. Recommended reading for all construction men who are proud of their industry.

CONTRACTING was the most attractive of all new business enterprises in 1946, according to the Department of Commerce, which reports 553 new firms for every 1,000 already in existence. We hate to discourage these newcomers, but we can't help pointing out that Dun & Bradstreet report contracting as the poorest paying business out of nine industries in 1945, averaging only 1.42 percent profits. From that report we suggest contractors swap their mixers, shovels and graders for drug, furniture or cigar stores or go into dressmaking, all of which show much higher profits than contracting.

HIGHWAY CONSTRUCTION PROSPECTS brightened when President Truman signed an amendment to the 1944 Federal Highway Act extending for a year the time in which states may qualify for federal funds made available by the act. Well-known construction difficulties in the last two years made it impossible for the various states to get enough work under way to use up their allotted funds. Without the time extension more than $150,000,000 of the original half billion dollars would have been lost June 30.

BEST NEWS in the building field in a long time is results of meetings between the AFL Building Trades of New York City and the New York Building Congress searching for means to stimulate and stabilize building construction in the area at least until 1950. Labor promises to live up to the Taft-Hartley Act (though admittedly fighting for repeal), to not limit a workman's output, to refer all agreement and jurisdictional disputes to arbitration without stopping work, to man adequately all jobs and to respect management's prerogative to hire and fire. Owners, investment interests, architects and contractors all look for labor peace in the New York building industry. A house-hungry building-starved public fervently hopes everyone means what he says.

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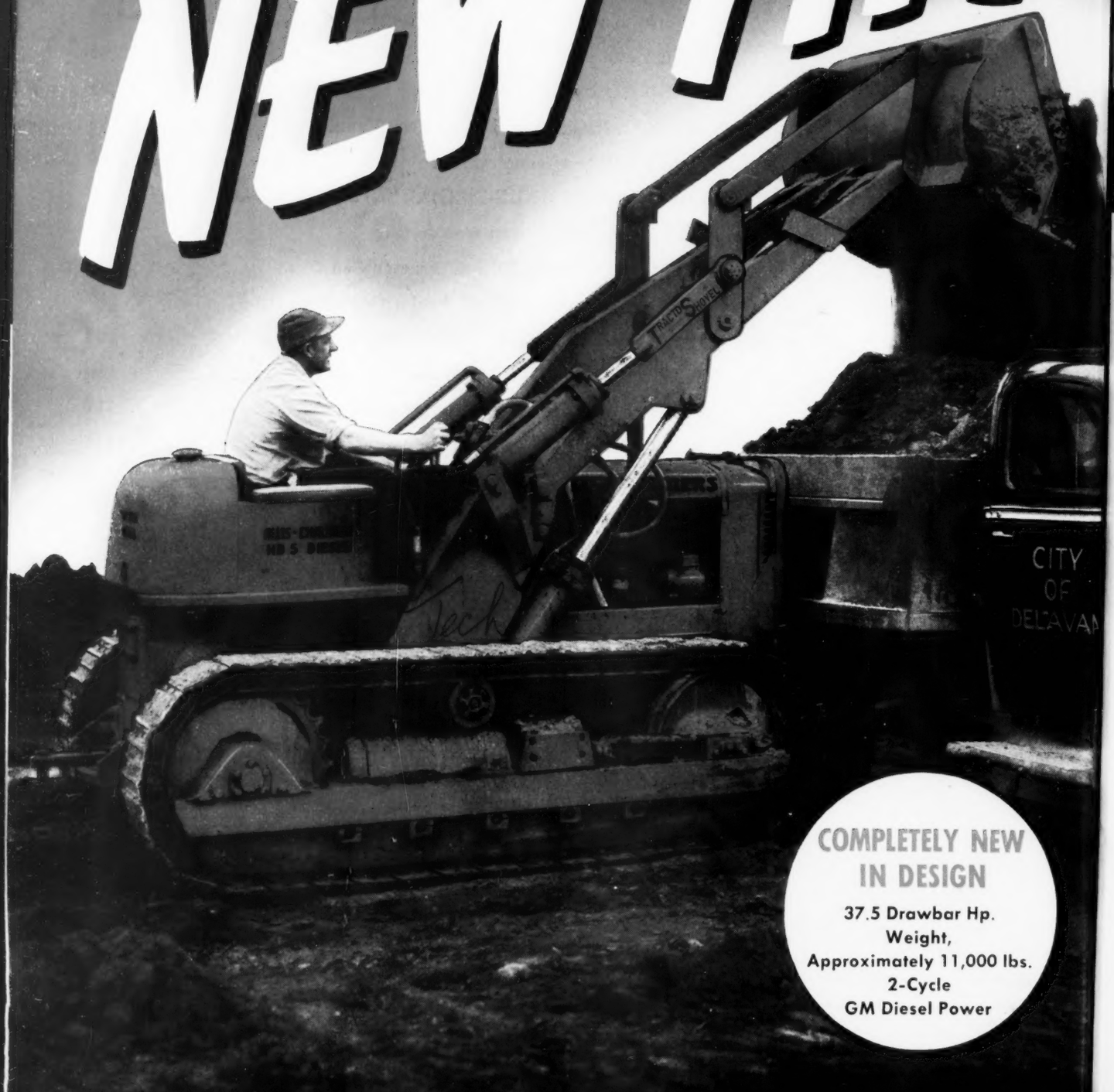
ALLIS-CHALMERS

HD-5

NEW THR



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Weight,
Approximately 11,000 lbs.
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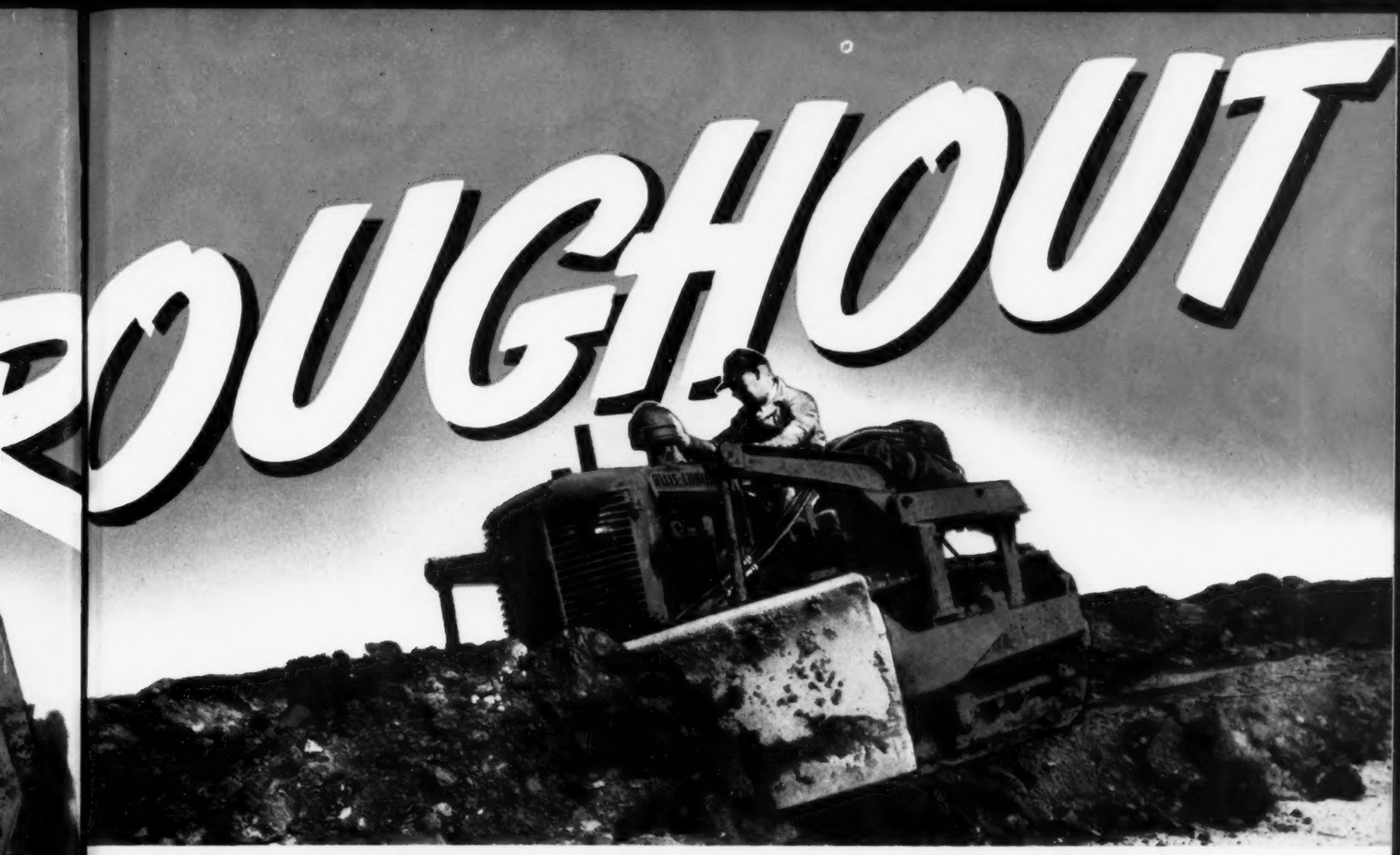
GM Diesel Power



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Comfortable operation.

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Increased lugging ability because of built-in characteristics of General Motors 2-Cycle Diesel engine.

More footing and greater traction to handle larger loads under a wider range of conditions.

Tractor weight balanced for most efficient drawbar and front-mounted equipment use.

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Tractor construction permits separate and convenient removal of major assemblies.

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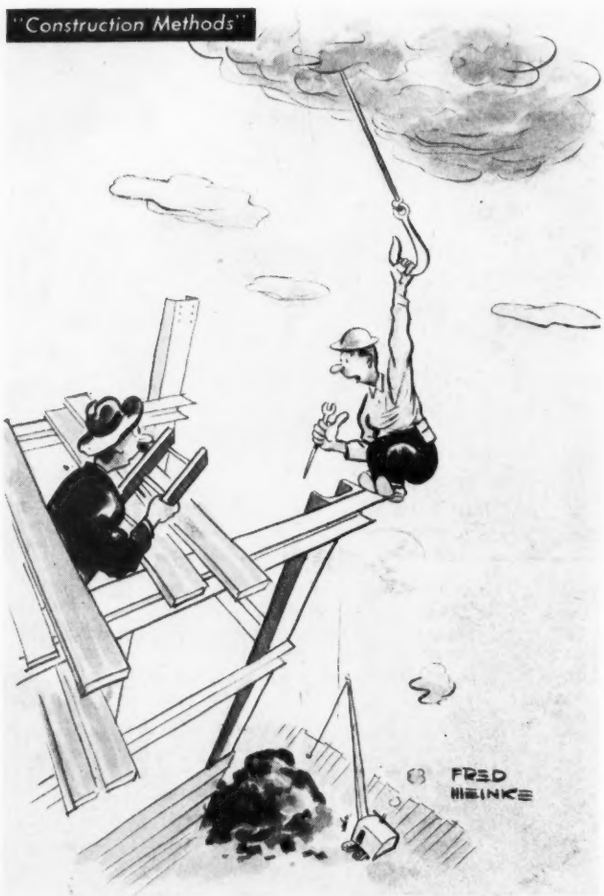
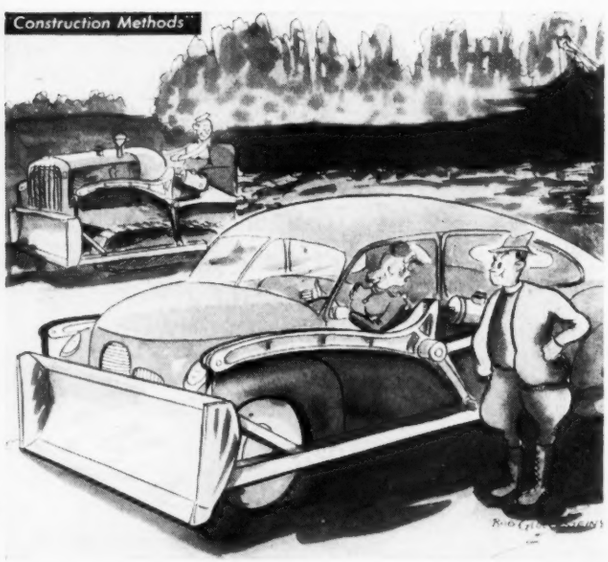
THE JOB JESTER

CARTOONS DRAWN FOR CONSTRUCTION METHODS



"Maybe you'll quit kidding me about skyhooks now."



"Honey, don't you trust my driving yet?"

"People Aren't Fireproof!"

BUILD HOSPITALS FIRE-SAFE WITH CONCRETE

Dependable 'Incor' high early strength saved real money ten years ago on these hospitals—at State Hospital No. 1, Fulton, Mo. (top), and at Winston-Salem, N. C. (above). At today's costs, these 'Incor' savings would be almost DOUBLE.

USE 'INCOR' FOR BIGGER-THAN-EVER TIME AND FORM SAVINGS

FIRE deaths have doubled in the last decade. *People aren't fireproof ... so buildings must be fire-safe ...* especially hospitals, schools, hotels and other lived-in structures. For utmost fire-safety, build them of concrete . . . use 'Incor' 24-Hour Cement to cut form costs, reduce time or overhead expense, get earlier occupancy at lower, not higher, cost.

Two hospital jobs, shown here, illustrate 'Incor' economies. Top, 'Incor' saved 30 days and $826 net, when this Missouri hospital was built in 1936 . . . left, net saving on form and lumber was $750 on this North Carolina hospital, built in 1938. *At TODAY'S form material and lumber costs, these savings would be almost DOUBLED.*

Figure it with 'Incor'*, America's FIRST high early strength Portland cement . . . it may cost you money if you don't!

*Reg. U. S. Pat. Off.

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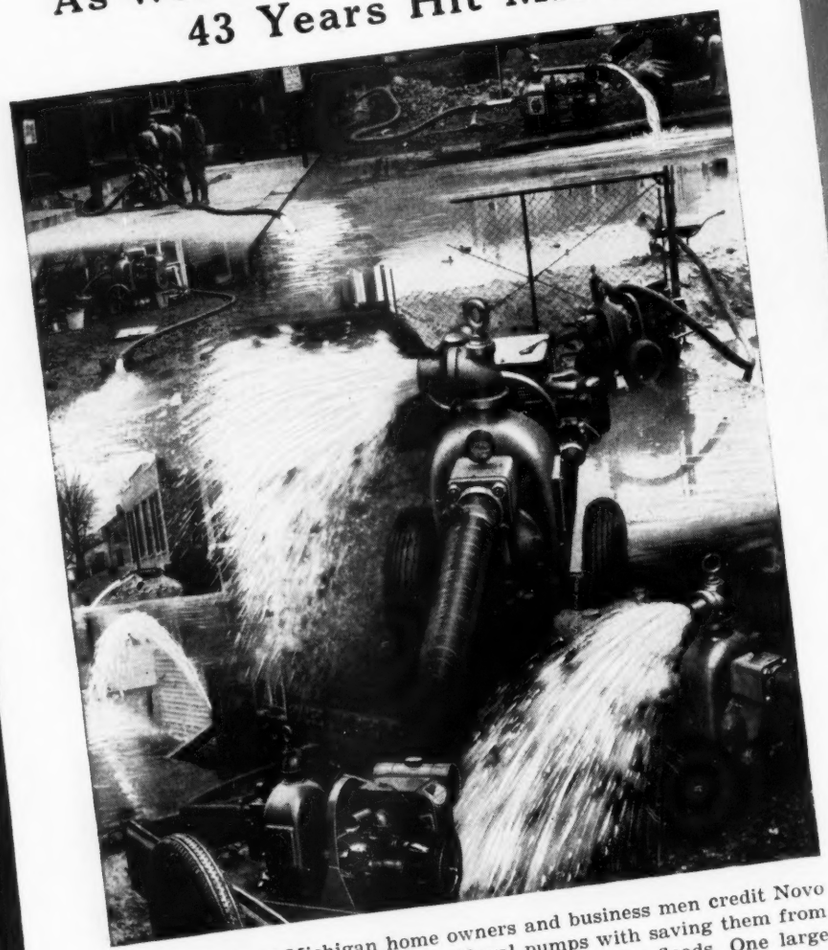
NOVO NEWS

JULY, 1947

Novo Pumps to the Rescue As Worst Spring Floods in 43 Years Hit Michigan



Hundreds of Michigan home owners and business men credit Novo "Pronto-Prime" self-priming centrifugal pumps with saving them from heavy financial losses during the disastrous spring floods. One large printing concern, for example, admittedly faced bankruptcy if the water reached the firm's stock and work-in-process inventory. Novo pumps, working 'round the clock saved the day—proved again and again under all sorts of emergency conditions that they can be depended upon when the going is tough.

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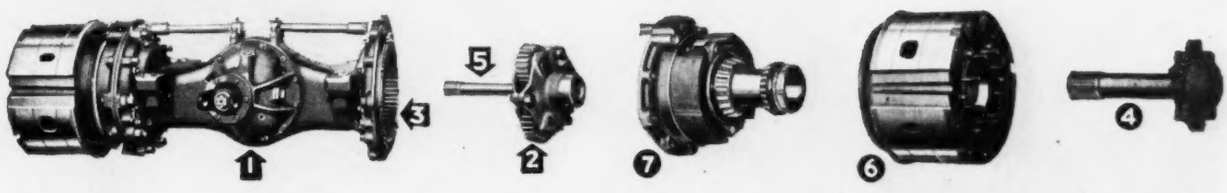
LONGER LIFE... OUTSTANDING PERFORMANCE in this...

EUCLID DRIVE AXLE



THIS double reduction planetary drive axle transmits tremendous pulling power with relatively little burden on the intermediate driving parts — transmission, differential, etc.

It is full-floating — all of the rear axle load being carried on heavy duty tapered roller bearings mounted on hollow axle spindles which keep axle shafts and gears entirely free from vehicle and payload weight. All working parts of this precision built axle assembly are completely enclosed in an oil bath.

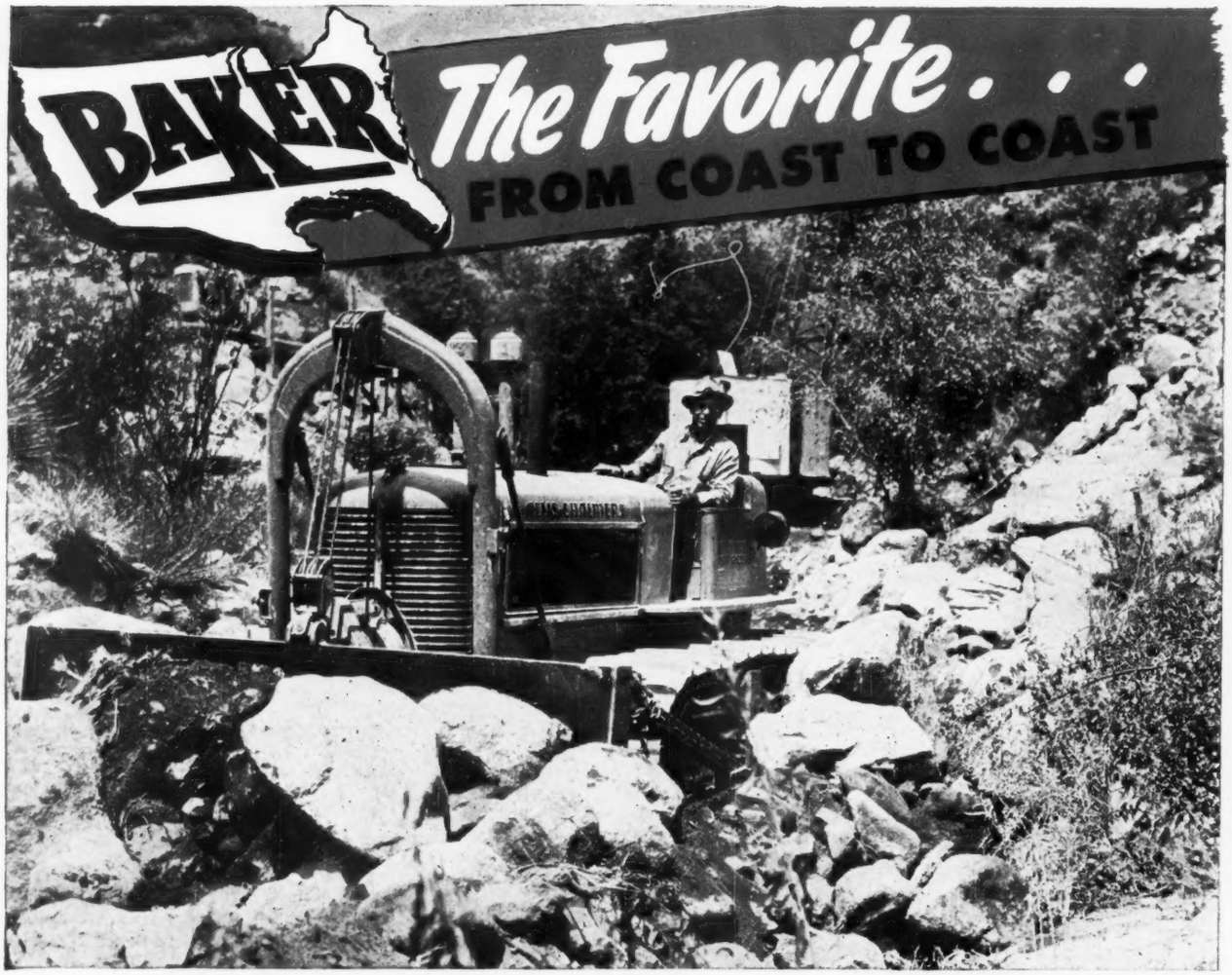
This type of drive axle has been used in both Rear-Dump and Bottom-Dump Euclids *for 14 years.* Its strength and capacity are unequalled by any other axle in heavy duty hauling equipment. The Euclid axle is a highly important factor in the longer life and outstanding performance of Euclids.

Advantages of Euclid Planetary Drive Axle

The driving parts of the Euclid axle are (a) — a primary reduction consisting of conventional spiral bevel ring gear, pinion and differential (1), (b) — secondary reduction of two floating planetary gear sets (2) each made up of a sun gear, three planetary gears and internal ring gear (3). The only parts carrying the full driving torque are the outer drive axles and hub caps (4). The inner axles (5) carry less than 1/5 of the torque delivered to the driving wheels (6) which are mounted on tapered roller bearings on the hollow spindles (7). The use of the planetary reductions makes possible minimum gear reductions in the transmission and differential and results in much lighter loads being imposed on all parts between the planetary gears and engine.

The EUCLID ROAD MACHINERY Co., Cleveland 17, Ohio

EUCLIDS *Move the Earth*



BAKER Cable Bulldozers are rapidly becoming the favorite among experienced earth-movers from coast to coast. It's the same story everywhere—BAKER—in the mines, quarries, oil fields, forests and tough construction jobs. It's Baker because of the many superior features and advantages that pay off in higher daily yardage, greater versatility and utility, more work hours per shift and reduced maintenance costs.

Now when you have the privilege of *selecting* equipment —it will pay you to get the facts on Baker Bulldozers and Gradebuilders, cable or hydraulic control. Write for literature or see your Baker-Allis-Chalmers distributor.

BAKER MFG. CO., SPRINGFIELD, ILL.

EASIER OPERATION—Less effort required to operate P.C.U. Brake

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QUICKLY CONVERTIBLE—Bulldozer or Gradebuilder employ same superstructure, control unit and trunions

REDUCED CABLE WEAR—"Straight Line" Reeving Large diameter sheaves and drums

HEAVY DUTY CONSTRUCTION—Simple in design, extra heavy construction, all mechanism readily accessible

BAKER

BAKER They Go Together! A-C

"STRAIGHT THROUGH" ASSEMBLY LINE – ALLIS-CHALMERS TO BAKER TO YOU!

The modern Baker plant with its completely equipped fabricating, machining and blacksmithing shops adjoins the Allis-Chalmers crawler tractor plant. When you order an A-C tractor with Baker bulldozer or gradebuilder, your tractor leaves the A-C assembly line, crosses a narrow court and goes on the Baker final assembly line.

This tire "wears" nylons for extra shock protection

WHEN heavily loaded tires like the B. F. Goodrich Super Traction shown above strike rocks or jagged stumps, the terrific impact may cause a bad bruise — or even a blow-out in a new tire.

A special shock shield to protect the rayon cord body by absorbing and *distributing* impact has been the B. F. Goodrich answer to the problem of impact bruises. Now, B. F. Goodrich is building shock shields of *nylon* for even greater protection against bruising.

In off-the-road tires a *double nylon shock shield* is used. It consists of four layers of nylon cords between the tread and the plies. These nylon layers are in pairs, cords in each pair running at scientifically determined angles to the cords in the other pair to give "balanced" strength.

The strong, elastic nylon cords in each layer run parallel, fully insulated in live rubber. Under impact, the cords in the shields stretch together, *not* across each other, and return to their original position. Because of this principle, sharp impacts are *distributed,* absorbed . . . the rayon cord body actually shielded from shock!

No make of tire other than B. F. Goodrich gives you the added protection of the double nylon shock shield . . . the additional savings through: (1) longer tire life; (2) increased number of recappable tires; (3) increased bruise resistance; and (4) less danger of tread separation.

Find out how B. F. Goodrich can help save you money on tires. See the B. F. Goodrich dealer or write us direct. *The B.F.Goodrich Company, Akron, Ohio.*

Truck Tires BY

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Is the answer—

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PERFECTION has the Body and Hoist combinations that will give you "full rein" -- no matter how ambitious your hauling plans may be.

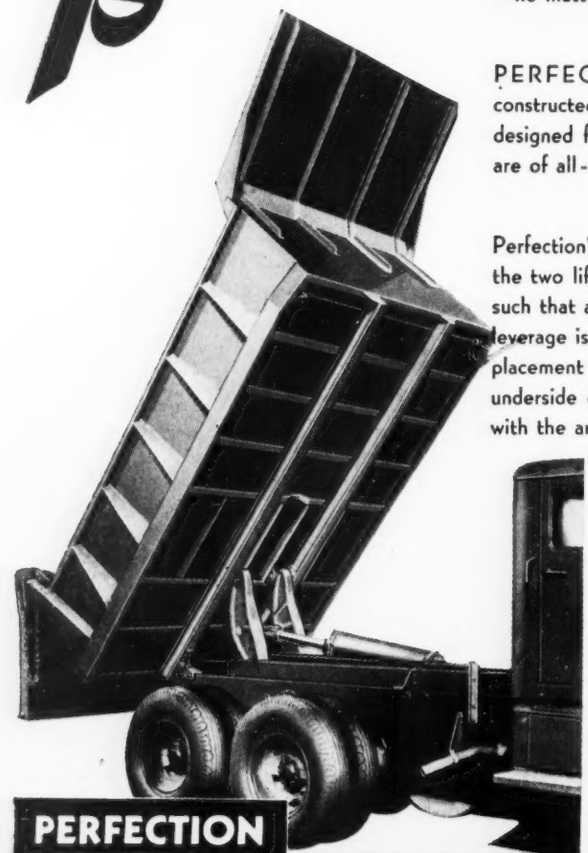
SUPER BODIES

PERFECTION "Series 300" Heavy-Duty Steel Dump Bodies are sturdily constructed of 8 gauge alloy sheet steel for greatest strength. They are especially designed for the most rigorous service -- heavily braced at all points of stress -- and are of all-welded construction.

SUPER HOISTS

Perfection's remarkably efficient **Iso-Draulic* ROLL-A-LIFT. The upper surfaces of the two lift arms engage two pressure rollers mounted on the body. The design is such that at the beginning of the stroke, where the lift is heaviest, the greatest leverage is provided. The result is tremendous capacity in relation to the piston displacement of this hoist. Two keeper-rollers (patents applied for) travel along the underside of the lift arm flanges, keeping the pressure rollers in constant contact with the arms regardless of body position. Write for complete information.

*Uniform pressure



PERFECTION SERIES 300 HEAVY DUTY BODIES

PERFECTION NO. 827 HEAVY DUTY HOIST

ISO-DRAULIC

ROLL-A-LIFT

THE PERFECTION STEEL BODY CO.
GALION, OHIO, U.S.A.

if there is a NORTHWEST in the picture

it's on the toughest part of the job!

TAKE any job you want to and if there is a Northwest on it you can bet it's on the rock end of the digging.

The Northwest Shovel is built for the toughest job a shovel has to do. It's big—powerful with a welded boom that has been proved under punishment.

Dipper sticks are tied together at the upper end with a cap casting that assures their working as a unit. The Dual Independent Crowd utilizes force that other shovels waste. The "Feather-Touch" Clutch Control gives the *feel of the load* and makes handling the big ones easy, and the Cushion Clutch eliminates the effects of shock overload to parts under power when the dipper hits immovable rock.

Here is a combination you won't find in any other shovel. Follow the Northwest Crowd and have a real Rock Shovel.

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Follow the NORTHWEST CROWD

Still the Standard toward which others build!

If you have a REAL ROCK SHOVEL *you won't have to worry about output in dirt*

NORTHWEST

SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

There's the RUB!
...and wherever wire rope works over sheaves—and on drums—there are also bending stresses. Heavy loads, too, add their burden.

You can depend on "Hercules" (Red-Strand) Wire Rope to meet all conditions, because it is the right combination and balance of strength, toughness and durability. As it is made in Round Strand and Flattened Strand constructions—both Preformed and Non-Preformed—there is a correct type for every heavy duty purpose.

Let the Red-Strand be your wire rope guide to faster and more economical production. We invite your inquiries.

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Contractors are Profitably Using . . .

ATHEY FORCE-FEED LOADERS

Problem: **To remove one thousand cubic yards of earth covering, laid to protect black top parking lot during Ringling Bros. Circus at Soldier Field, Chicago.**

Solution: **An Athey Force-Feed Loader and "Caterpillar" Motor Grader.**

After the Motor Grader bladed the earth into windrows, the Athey Force-Feed Loader quickly loaded it into trucks completing the 1000 cu. yd. earth removal in eight working hours. Contractors are finding countless time-saving and economical uses for the Athey Force-Feed Loader. It's unexcelled for loading materials from such jobs as ditch cleaning, berm trimming, road widening and grading, ditch building, dressing slopes; for loading oil mix, damp leaves, scarified macadam and snow. Ask your Athey-"Caterpillar" Dealer for further facts, or write Athey Products Corporation, 5631 W. 65th St., Chicago 38, Illinois.

Athey APCOR Products

Represented in all countries by distributors of "Caterpillar" track-type Tractors.

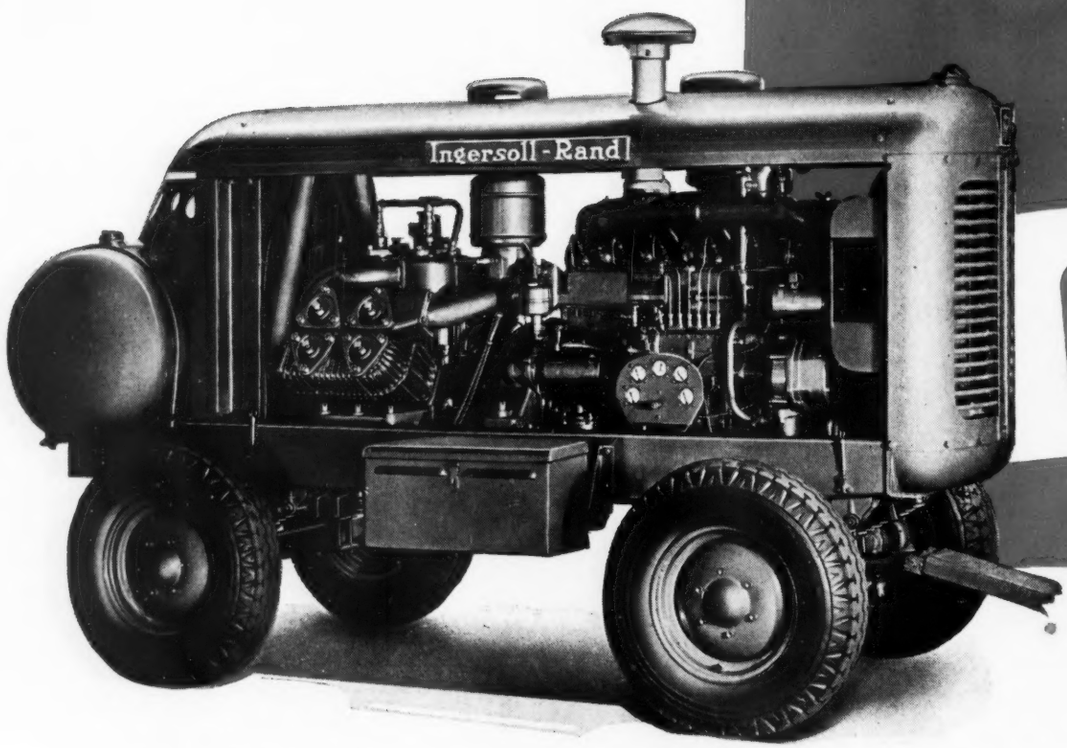
End loading eliminates "traffic tie-up", permits "one lane" loading on highway jobs. Handles any type of material; pick-up is clean and speedy.

Athey

DEPENDABLE HAULING AND LOADING EQUIPMENT

KEEP

GET



What's the best way to keep compressor valves clean?

Effective lubrication—***Texaco Alcaid, Algol*** or ***Ursa Oil.***

Why those particular oils?

Because ***Texaco Alcaid, Algol*** and ***Ursa Oils*** are especially refined to free them of impurities that form hard carbon deposits. Any slight amount of carbon that may form in use is soft and fluffy—won't impede valve action.

That all?

No. These oils keep rings free, too—and ports and air lines clear. Your compressors run more efficiently, give full air pressure at your drills. Thus you have less maintenance expense—fewer repairs and overhauls.

All right, which of the three do I use—Alcaid, Algol or Ursa Oil?

They're all in the same series, developed for effective compressor lubrication. Use the one recommended by Texaco Lubrication Engineering Service for your particular operating conditions.

Where can I get Texaco service and products?

Just call the nearest of the more than 2500 Texaco distributing plants in the 48 States, or write The Texas Company, 135 East 42nd St., New York 17, N. Y.

Tune in . . .
TEXACO STAR THEATRE
presents the NEW
TONY MARTIN SHOW
every Sunday night.
See newspaper for
time and station.

TEXACO

TEXACO

VALVES CLEAN...

MORE AIR

PROTECT YOUR DRILLS

Effective lubrication does it! Texaco Rock Drill Lubricants (E.P.) prevent rust in service and in storage, resist washout, protect all moving parts against wear even in the heaviest service. They conform to lubrication specifications of leading rock drill manufacturers.

Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

Familiar

"I think that 'Caterpillar' Diesel Tractors and Engines are the best on the market."

"These engines are simple—most anyone can operate them."

"The main thing that I like about 'Caterpillar' Diesels is their ability to stay in there and work."

"Our 'Caterpillar' Diesels are rarely down for repairs."

The words are contractor W. R. Skousen's, but they're the kind of expressions you hear from satisfied owners of "Caterpillar" products the world over. They reflect a "Caterpillar" leadership in the field of Diesel-powered equipment that is becoming more and more pronounced as the years roll up unusual performance records by these sturdy, dependable, long-lived machines.

No wonder there's a big demand for virtually every type of "Caterpillar" unit—despite the fact that "Caterpillar" peacetime production is greater than ever. (A huge "Caterpillar" plant-expansion program is being pushed to completion.)

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

Quotations

ROCK CRUSHING, MODERN STYLE—Three "Caterpillar" Diesel Engines power this portable plant producing 175 tons of 1" rock per hour on a 60,000-ton job. A 'dozer-equipped "Caterpillar" D8 Tractor levels the material on an Arizona road which is being paved by a new reclamation service method. Owner W. R. Skousen is a long-time "Caterpillar" enthusiast.

DETROIT PUBLIC LIBRARY

CATERPILLAR DIESEL

REG. U. S. PAT. OFF.

ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

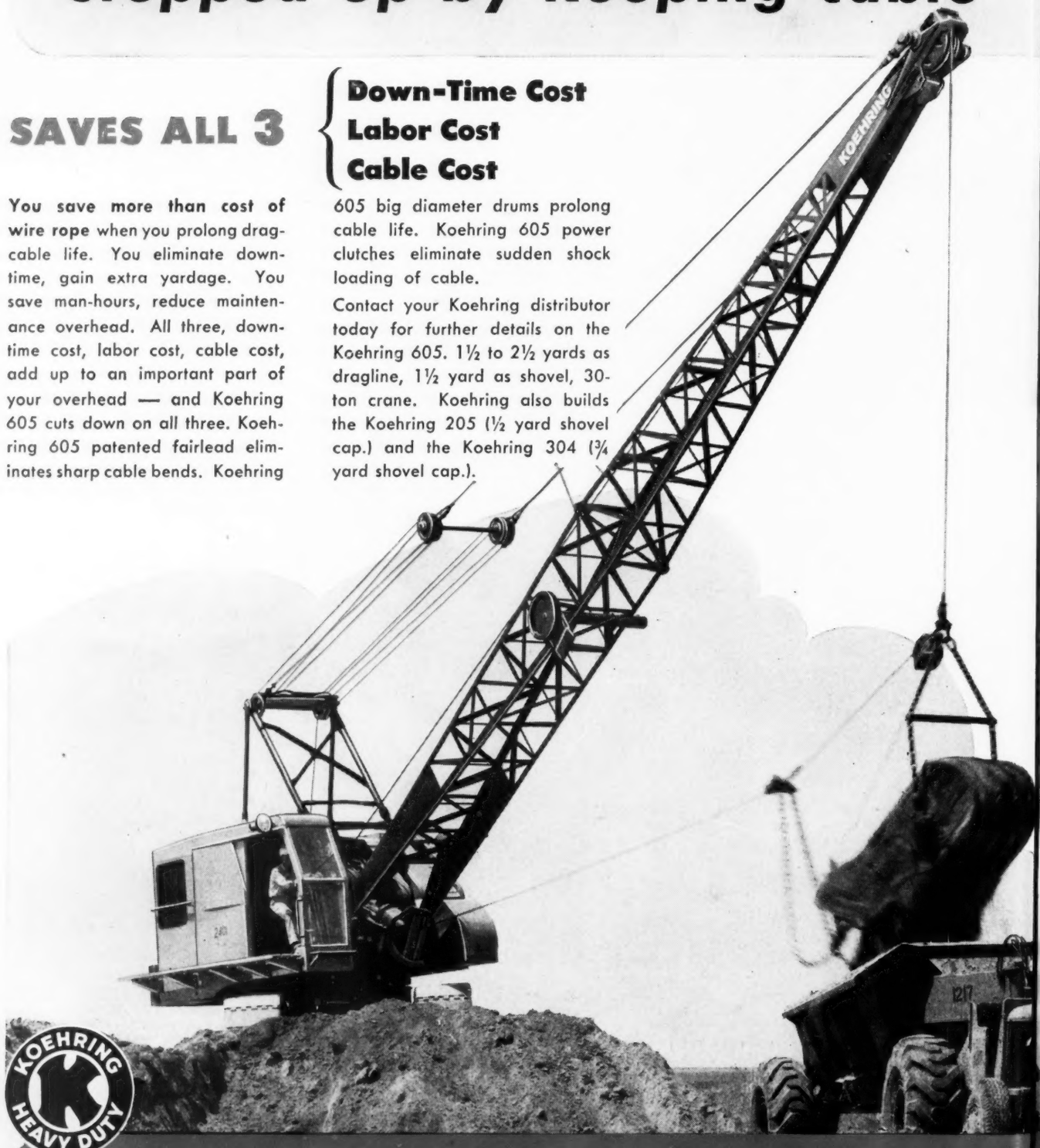
KOEHRING 605 Dragline
stepped up by keeping cable

SAVES ALL 3

Down-Time Cost
Labor Cost
Cable Cost

You save more than cost of wire rope when you prolong drag-cable life. You eliminate down-time, gain extra yardage. You save man-hours, reduce maintenance overhead. All three, down-time cost, labor cost, cable cost, add up to an important part of your overhead — and Koehring 605 cuts down on all three. Koehring 605 patented fairlead eliminates sharp cable bends. Koehring 605 big diameter drums prolong cable life. Koehring 605 power clutches eliminate sudden shock loading of cable.

Contact your Koehring distributor today for further details on the Koehring 605. 1½ to 2½ yards as dragline, 1½ yard as shovel, 30-ton crane. Koehring also builds the Koehring 205 (½ yard shovel cap.) and the Koehring 304 (¾ yard shovel cap.).

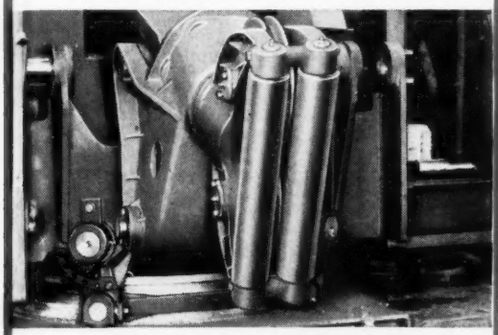


KOEHRING COMPANY

Profits cost low

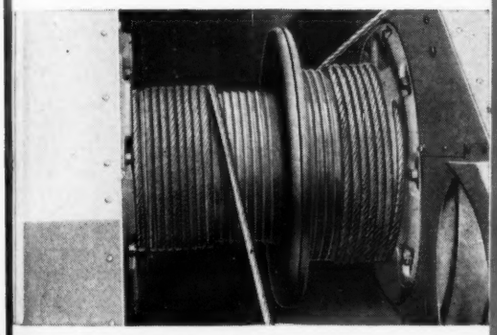
FAIRLEAD SAVES CABLE

With bucket at any angle, Koehring-patented rotating fairlead keeps drag cable running over big 15-inch sheaves. No cable wearing bends. Cable can't jump out.



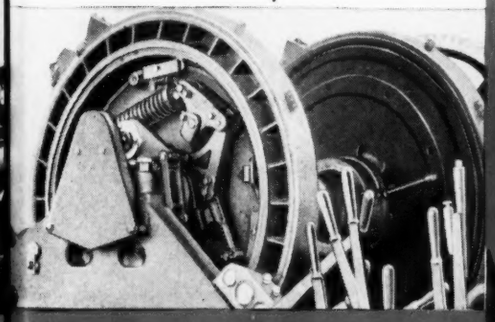
DRUM SAVES CABLE

Slack cable hugs drum grooving because drag cable spools over top of drum. 19-inch drag lagging has large cable capacity. Long lead from fairlead to drum.



CLUTCH SAVES CABLE

Koehring exclusive power clutches prevent shock loading, are easy on cable. You always get smooth engagement without jerking because speed of drum-shaft rotation controls speed of engagement.



MILWAUKEE 10, WISCONSIN

Johnson EXTRA TONNAGE at NO EXTRA COST

FASTER OPERATION

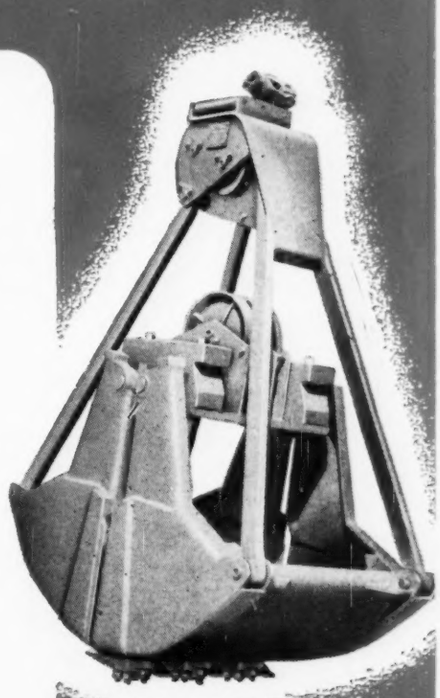
Large diameter sheaves, with fully sealed needle bearings, reduce friction power loss, deliver full power to cutting lips to provide faster, smoother operation.

BIGGER LOADS

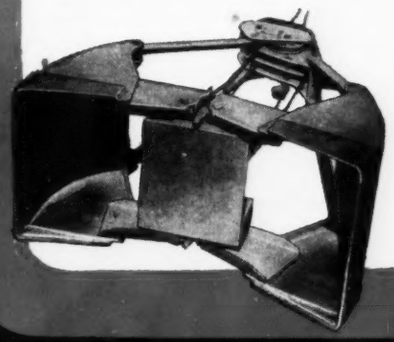
Because all-welded construction improves bucket balance and lowers center of gravity, Johnson bucket teeth dig in straight and deep. Deep, big bites get capacity load every time, in any material.

LONGER LIFE

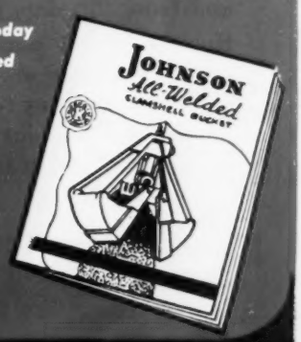
Stronger and longer-lived because all-welded construction, by saving weight on other parts, permits use of heavier lips, heavier sides, heavier bottoms. Protector plate below lower sheaves keeps sheaves clean, prolongs sheave life. Hard manganese cutting edge, welded to heavy lips, actually gets tougher with use.



⅜ to 2½ yard sizes. General Purpose, Wide Rehandling and Heavy-duty Digging Type.



Write today illustrated catalog.

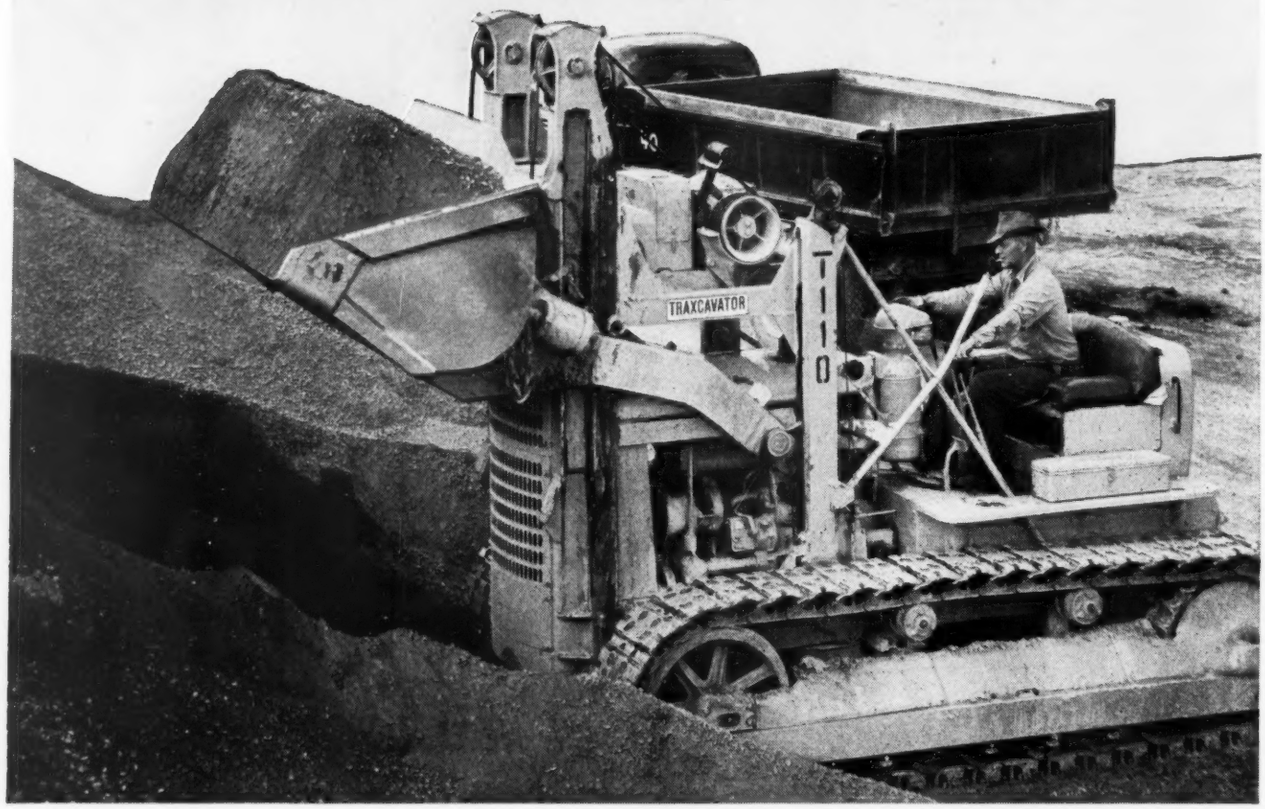


THE C. S. JOHNSON COMPANY

KOEHRING SUBSIDIARY CHAMPAIGN, ILLINOIS

BIG BITES *plus* HIGH MOBILITY

keep trucks on the move



LOADING aggregate from stockpiles as pictured above is an easy and efficient TRAXCAVATOR job. Their direct, powerful digging action gets big bucket loads quickly . . . from toughest earth, shale, clay, caliche and frost . . . digs *profit* from any job.

But that's only part of the TRAXCAVATOR story. For they are known all over the Construction Industry for their versatility . . . dig, grade, load, bulldoze, level, spread, strip, carry and haul . . . in fact they do more different kinds of jobs at lower costs than any other machine of comparable size, power and capacity.

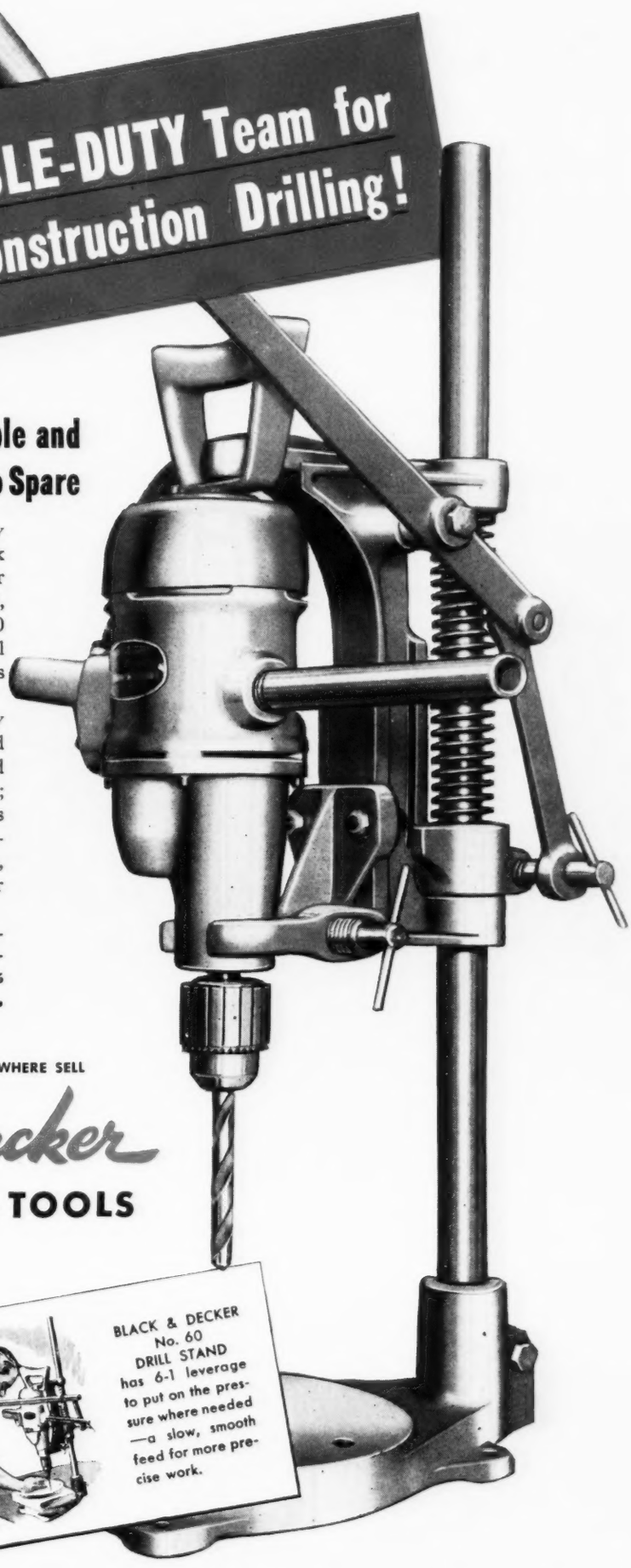
TRAXCAVATORS, powered by "Caterpillar" track-type tractors are available in four sizes with bucket capacities ranging from ½ to 2½ cubic yards. There's a size and type for every job and purpose. See your TRACKSON-"Caterpillar" dealer about time-and-money-saving ways to use TRAXCAVATORS, or write direct to TRACKSON COMPANY, Dept. CM-77, Milwaukee 1, Wisconsin.

TRAXCAVATOR

REG. U. S. PAT. OFF.

The Original Tractor Excavator

Here's Your DOUBLE-DUTY Team for HEAVY-DUTY Construction Drilling!



Same Drill Does Both Portable and Stationary Work with Power to Spare

The Black & Decker 5/8" *Heavy-Duty* Electric Drill gives you *extra* chuck capacity and *extra* power for your toughest drilling and boring jobs. And, mounted in a Black & Decker No. 60 Drill Stand, it makes a powerful drill press that saves muscle and man-hours in stationary drilling!

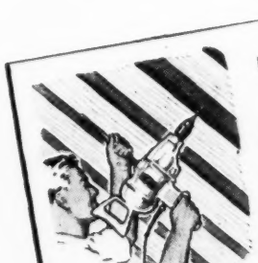
You can run this Drill *continuously* in drilling through metal; driving wood augers through heavy timbers and planking; "framing up" concrete forms; tying rafters together. That's because its heavy-duty, B & D-built motor is specially constructed for *constant* service, operates from standard power line or portable generator.

Ask your nearby Black & Decker Distributor for full information. Write today for our catalog to: The Black & Decker Mfg. Co., 659 Pennsylvania Ave., Towson 4, Maryland.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC TOOLS



BLACK & DECKER 5/8" HEAVY-DUTY DRILL drives twist drills up to 5/8" in steel—wood augers up to 1¼" in hardwood—Hole Saws up to 3½".

BLACK & DECKER No. 60 DRILL STAND has 6-1 leverage to put on the pressure where needed—a slow, smooth feed for more precise work.

How RED LEAD "PASSIVATES" METAL ...inhibits RUSTING

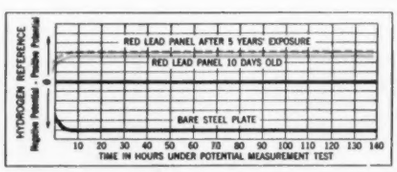
Research discloses sound reasons for Red Lead's long acceptance as the "standard" metal protective paint.

None is more important than Red Lead's ability to keep iron and steel in a "passive" state, in which the rusting process is held to a minimum.

As you know, unpainted steel, exposed to moisture, rapidly rusts. However, the same metal, under identical exposure conditions, remains "passivated," or rust-inhibited, when coated with Red Lead.

Proof of this is given in the graph at the right. It shows clearly the rust-inhibitive effect of Red Lead paint on steel, as contrasted with the rapid and continuous rusting of unpainted metal.

It is worth noting that, even after five years' exposure, the "passivating" power of Red Lead is still retained. Small wonder, then, that maintenance men think of Red Lead *first* when it comes to making metals *last*.


HYDROGEN REFERENCE
Negative Potential ↓ Positive Potential
RED LEAD PANEL AFTER 5 YEARS' EXPOSURE
RED LEAD PANEL 10 DAYS OLD
BARE STEEL PLATE
10 20 30 40 50 60 70 80 90 100 110 120 130 140
TIME IN HOURS UNDER POTENTIAL MEASUREMENT TEST

Graphic Evidence of RED LEAD'S Protective Power

The non-corroding state of Red-leaded steel, as compared with unprotected steel, was measured electrically. A piece of unpainted steel was immersed in water. The iron, going into solution, reacted with oxygen in the water to form rust. This unrestrained corroding state is indicated by a rapidly developed and maintained negative potential relative to hydrogen (see above graph).

However, when steel panels painted with Red Lead were immersed under the same conditions, iron and lead salts formed directly next to the metal. This action at once stifled corrosion by preventing the iron from going into solution, thus keeping the steel surface passive. The result is shown in the graph curves above, where a quickly rising positive potential remains constant throughout the test.

* * *

Remember, too, that Red Lead is compatible with practically all vehicles commonly used in metal protective paints, including many of the fast-drying resin types.

Specify RED LEAD for ALL Metal Protective Paints

The rust-resistant properties of Red Lead are so pronounced that it improves any metal protective paint. So, no matter what price you pay, you'll get a better paint if it contains Red Lead.

* * *

The benefit of our extensive experience with metal protective paints for both underwater and atmospheric use is available through our technical staff.

NATIONAL LEAD COMPANY: New York 6; Buffalo 3; Chicago 8; Cincinnati 3; Cleveland 13; St. Louis 1; San Francisco 10; Boston 6 (National Lead Co. of Mass.); Philadelphia 7 (John T. Lewis & Bros. Co.); Pittsburgh 30 (National Lead Co. of Pa.); Charleston 25, W. Va., (Evans Lead Division).

DUTCH BOY
Reg. U. S. Pat. Off.
RED LEAD

Two flat cars of WHEELER TANDEM ROLLERS roll east for delivery.

WHEELER Tandem Rollers

This illustrates a WHEELER TANDEM ROLLER compacting close to curb line.

SPECIFICATIONS

POWER: Allis-Chalmers Industrial Model B gasoline engine, 4 cylinder. Brake horsepower—24.5 @ 1500 RPM, 27.8 @ 1800 RPM. Speeds—2 forward and 2 reverse. First gear—1.55 MPH @ 1500 RPM, 2.55 MPH @ 1800 RPM. Second gear—2.75 MPH @ 1500 RPM, 4.00 MPH @ 1800 RPM. Continental and Hercules engines also furnished.

DIMENSIONS: Wheel base 7'10". Length overall 10'7". Width overall 3'6". Tank height 4'0". Ground clearance 10". Left side clearance 1½".

COMPACTION ROLLER: Width 36", diameter 37". Rolled and machined from ⅞" stock.

STEERING ROLLER: Width 34", diameter 27" Rolled and machined from ¾" stock.

COMPRESSION Per Lineal Inch: Compaction roller, 150 lbs. with ballast. Steering roller, 70 lbs. with ballast.

SPRINKLER SYSTEM: Gravity type. Tank capacity, 45 gallons.

WEIGHTS: Shipping weight (approximately) 5400 lbs. Maximum weight (with ballast) 8000 lbs.

Specifications and prices subject to change without notice.

NEW DEALERS ARE BEING ADDED—CHOICE TERRITORIES ARE STILL AVAILABLE . . .

Work with ease . . .

The Wheeler 3 to 4 ton Tandem Roller will save you time and money on compacting jobs. The Wheeler Roller maneuvers in small areas with its short 7' 10" wheel base. It works comfortably within 2" of buildings, it rolls right to the curb with its 10" high frame clearance. A full working-width is compacted with the 34" and 36" steering and compacting rollers.

Convenient, quicker operation is provided by the Wheeler. Clear visibility on the right hand side permits the operator to see BOTH rollers at work, permitting hair-line operation. The easy operating hand wheel or hydraulic steering gives rapid, less tiring operation. The single-lever clutch moves the machine both forward and backward, allowing the operator immediate and precise control. Conveniently located, the foot brake quickly stops the machine, and a hardened steel ratchet locks the brake for parking. The parking brake is engaged or released by the tipping action of the driver's foot. Free access to all working parts is provided and it is easier for the operator to mount or dismount. This tandem roller is easily loaded and transported from job to job. The Wheeler is low in first cost and upkeep—more economical to operate. Immediate delivery is now yours.

Write for the name of your local dealer; ask for the new 6-page 2-color folder giving complete information

A WHEELER TANDEM ROLLER shown doing an excellent compacting job near the Warner Bros. First National Pictures lot, Burbank, California.

WHEELER ROLLER DIVISION

SHAW SALES & SERVICE CO.

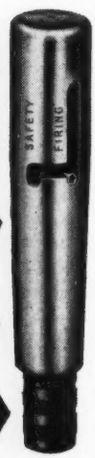
5100 Anaheim-Telegraph Road, Los Angeles 22, California

THE SHOT HEARD 'ROUND THE INDUSTRIAL WORLD!

TEMPOTOOL

AMAZING NEW HAND TOOL FASTENS STEEL TO STEEL—STEEL TO CONCRETE OR BRICK!

TEMPOTOOL MODEL 38



TEMPOTOOL • MODEL 22

NO DRILLING!

NO WIRES OR AIR LINES!

COMPLETELY SAFE
WHEN USED IN ACCORDANCE WITH INSTRUCTIONS!

EASY TO USE—
CUTS WORKER FATIGUE!

THOROUGHLY TESTED
ON MANY JOBS!

PATENTS PENDING

PERFORMS THOUSANDS OF FASTENING JOBS IN *SECONDS* THAT FORMERLY TOOK *HOURS!*

Here it is . . . TEMPOTOOL, the tool that has revolutionized hundreds of construction, installation and maintenance jobs! Fastens steel to steel or steel to concrete in split-seconds! Uses a blank cartridge for power to drive a "holding stud" or "drive pin" into the basic material. Holding principle similar to that of a nail—increased a thousand-fold.

TEMPOTOOL is powder-actuated—using a principle never before employed by a hand-tool. No outside power source is required. No wires, air lines, generators or transformers are needed. You can use TEMPOTOOL *anywhere.*

Get the facts on TEMPOTOOL and decide how it can save *you* time and money on fastening jobs.

TEMPO PRODUCTS COMPANY

400 PERRY-PAYNE BLDG., CLEVELAND 13, OHIO

THE STORY OF TEMPOTOOL
SEND FOR *FREE* BROCHURE

PRINCIPLE OF OPERATION

Tempotool employs the power of an exploding cartridge to drive "holding studs" into steel or concrete. The tool is fired by pushing the muzzle of the tool sharply against the work.

Tempotool projectiles have a thin flange around the edge of the head which shears off when the tool is fired. This flange, by momentarily confining the gases of the explosion, builds up the terrific pressure which gives the projectiles their high velocity. Despite this power, recoil is amazingly light.

SOLD NATIONALLY THROUGH RECOGNIZED DISTRIBUTORS ONLY

TYPICAL PROJECTILES

DRIVE PIN—for jobs where fastening only is required. Comes in one size for Model 22 and two for 38.

THREADED STUD—for use when objects are to be screwed to stud head. For both Model 22 and 38.

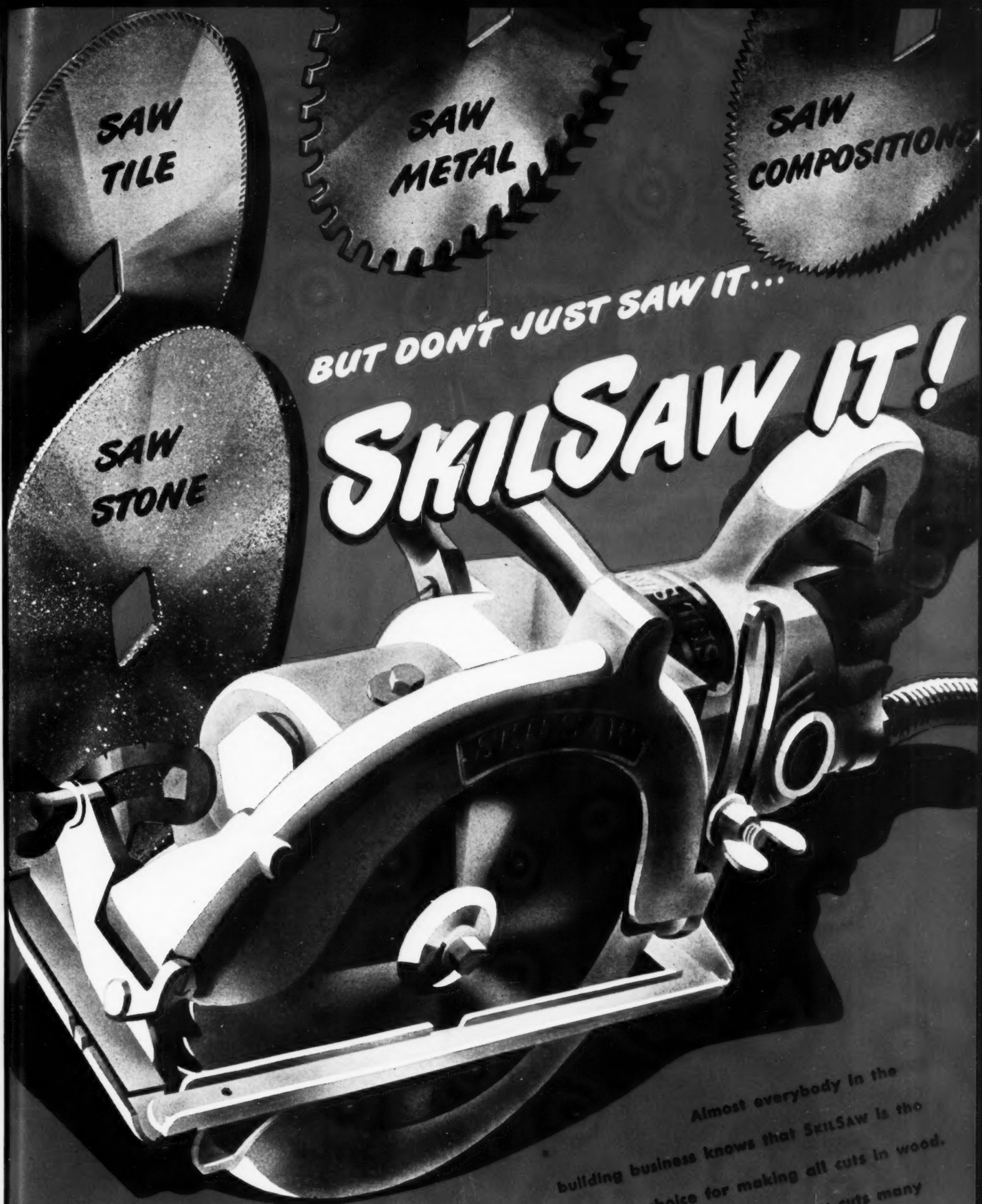
INTERNAL THREADED STUD — accommodates threaded rods, etc. Available for Model 38 only.

Other type studs made to order for special jobs.

TEMPOTOOL

TRADE MARK REG. U. S. PAT. OFF.

INTRODUCING A NEW ERA IN HAND TOOLS



Almost everybody in the building business knows that SKILSAW is the number one choice for making all cuts in wood. But do you know that SKILSAW cuts many other materials, too . . . even wired glass? See your distributor today about a demonstration.

SKILSAW, INC.
5033 Elston Ave., Chicago 30, Illinois
Factory Branches in Principal Cities

ELECTRIC PNEUMATIC
SKILTOOLS

SKILSAWS · SKILSANDERS · SKILNIBBLER · SKILGRINDERS · SKILDRILLS

MADE BY SKILSAW, INC.

New! THIS B-G HIGH

..Coordinated Equipment for Finest Bituminous Mixing Performance

The B-G Method of bituminous mixing has for years proved its superiority.

Now Barber-Greene presents more new and important time-and-cost-saving advantages in this latest B-G Central Mixing Plant equipment.

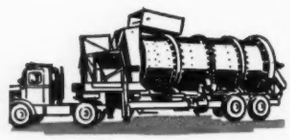
Barber-Greene engineers have developed a new, simplified drive system. Power is transmitted from a central power unit—through shafts—to the Dryer, Cold Elevator, Reciprocating Feeder, Hot Elevator and Gradation Control Unit.

4-bin Gradation Unit with 3½-deck vibrating screen provides new ease and flexibility of multiple aggregate control. Aggregate calibration and bin sampling have been simplified. Convenient hoisting device makes it easy to erect Hot Elevators and screen.

The need for pits for Hot and Cold Elevators has been eliminated.

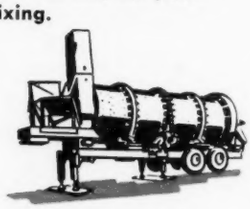
All these—and others—are features you want, and what you'd expect of Barber-Greene, the pace-setter in better bituminous mixing.

..New PORTABILITY!



Semi-Trailer Mounting **on Model 837 Dryer and Model 866 Gradation Control Unit; Model 880 Hot Elevators have removable pneumatic-tired dolly for towing; all units designed for maximum portability, flexibility, ease and speed of erection.**

..New CONVENIENCE!



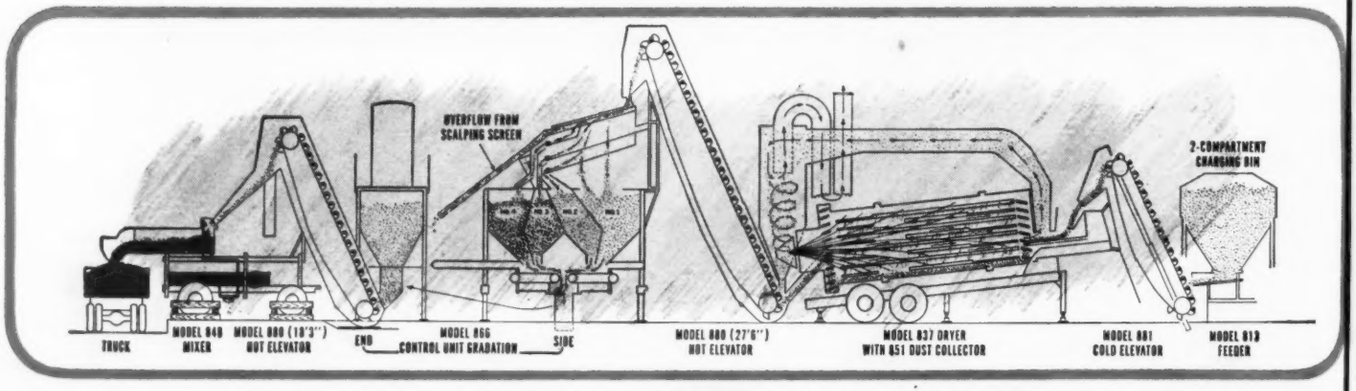
No Foundations. **Adjustable jack-legs eliminate time-wasting cribbing. The 837 Dryer shown above is a single-drum, high-capacity unit with high roto-elevator discharge.**

No Elevator Pits. **Hot and Cold Elevators operate from ground level.**

FROM 80 TO 120 TONS PER HOUR

That's what you can do with this new B-G Central Plant. Flow Chart below illustrates the B-G Continuous Flow Method: measured volumetric aggregate content, metered bitumen supply, controlled temperature and thorough twin-pugmill mixing to assure proper coating of aggregate—these are coordinated by B-G engineered equipment.

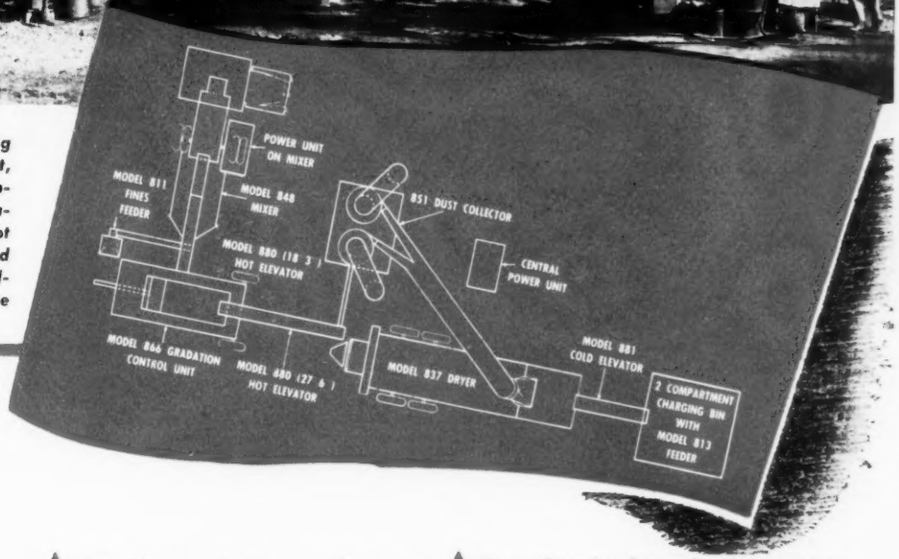
For your specific requirements, combinations of a wide variety of B-G Units and Auxiliary Equipment are available. Finding the best combination for you calls for close consultation with your B-G distributor. He can call on factory experts: together you'll get the right equipment and accessories to do the job you're figuring on.



CONSTANT FLOW EQUIPMENT

Barber-

CAPACITY PLANT!


POWER UNIT ON MIXER
MODEL 811 FINES FEEDER
MODEL 848 MIXER
851 DUST COLLECTOR
MODEL 880 (18' 3") HOT ELEVATOR
CENTRAL POWER UNIT
MODEL 881 COLD ELEVATOR
MODEL 866 GRADATION CONTROL UNIT
MODEL 680 (27' 6") HOT ELEVATOR
MODEL 837 DRYER
2 COMPARTMENT CHARGING BIN WITH MODEL 813 FEEDER

Here's a typical B-G "High-Type" Mixing Plant set-up with Gradation Control Unit, utilizing B-G Coordinated Auxiliary Equipment. For Intermediate-Mix Plant, Gradation Unit and second Hot Elevator are not needed. Dual classification of undried aggregate may be obtained with B-G adjustable 2-gate Reciprocating Feeder. Note that the B-G Method is flexible.

THESE BG ADVANTAGES will interest You

- **High Discharge** Dryer which eliminates Hot Elevator pit. Positive charging feeder on Dryer prevents bridging of stable mixtures.
- **Shaft and gear box** drives, with sealed antifriction bearings and fewer power units.
- **Four-bin aggregate** separation — your choice of 2, 3 or 4-aggregate gradation.
- **Instantaneous bin sampling** and simplified calibrating facilities.
- **Speedier, easier erection** and dismantling; semi-trailer mountings for greater portability.
- **Dual Cyclone Dust Collector** reclaims fines from Dryer exhaust gases and reduces dust nuisance.
- **New Fines Feeder** makes it convenient to add a measured proportion of fines.
- **Extensive application of antifriction bearings.**
- **Lower Maintenance Costs.**
- **Barber-Greene Experience:** broadest background in practical application of this most advanced bituminous mixing method. It is at your service—through your B-G distributor.

See the distributor near you, or write to Barber-Greene, Aurora, Ill. for descriptive literature.

Barber-Greene

AURORA, ILLINOIS

Cost-Cutters

INTERNATIONAL

Efficient Dirt Moving Hems in Old Man River

THREE International TD-18 Diesel Crawlers moved 150,000 cubic yards of black gumbo, sand and clay, in 60 calendar days. They were rebuilding a levee near West Memphis, Arkansas, on the Mississippi. Hauls were as long as 1200 feet, weekly yardage as high as 30,000. And they loaded at small borrow pits *without pusher assistance* to get capacity loads in 10-yard scoops. Only one additional crawler, a TD-14 with "Trail-builder," was needed to level the haul roads, dress levee to grade and spread dirt deposited by the TD-18's and their scoops.

Performance like this points up the superiority of International Diesels for earth-moving. Their 4-cycle valve-in-head engines provide dependable, economical power. Perfect weight distribution, adequate ground contact, rugged construction and extremely durable moving parts give them the ability to handle the tough earth-moving jobs with ease.

Their in-built, quick-starting system means that they waste no time getting to work. And the little time required for

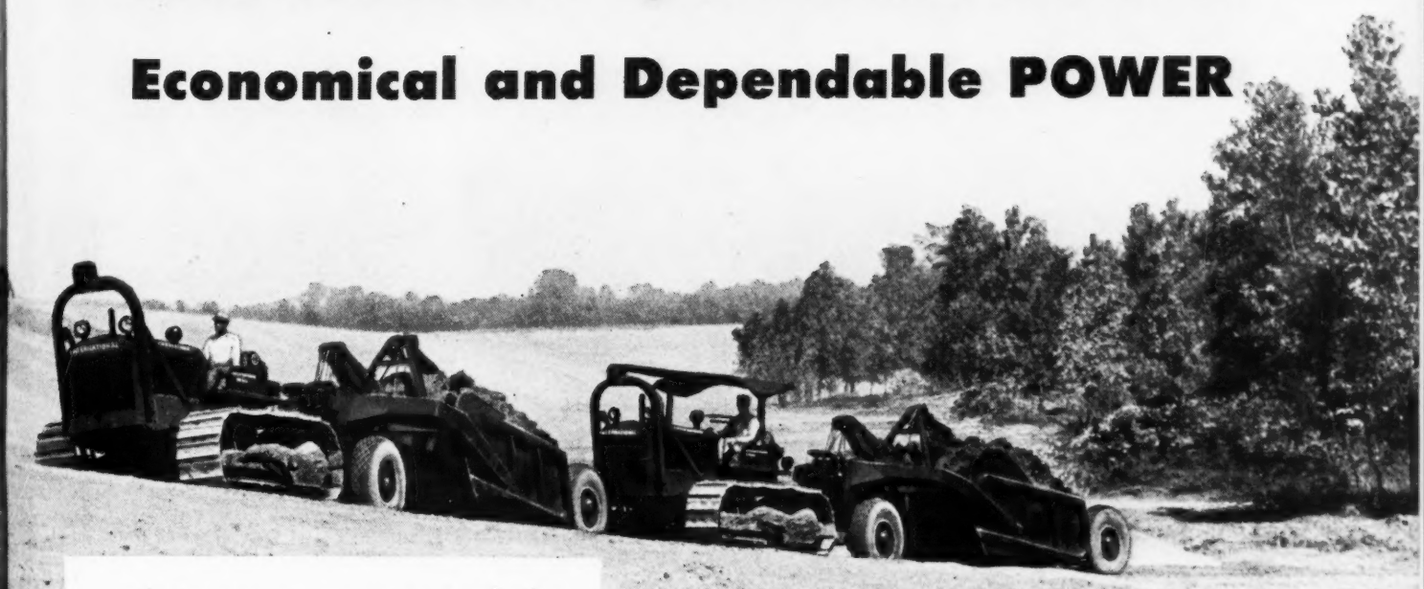
CRAWLER TRACTORS
POWER UNITS
DIESEL ENGINES
WHEEL TRACTORS

INTERNATIONAL

at Work---

Diesel Crawlers

Economical and Dependable POWER



maintenance means *more productive hours* in every day.

Use International Diesel Crawlers and matched equipment on all your earth-moving jobs. You can get the latest information, facts and figures on International Crawlers, Wheel Tractors, Power Units and Diesel Engines now in production, from your International Industrial Power Distributor.

Industrial Power Division
INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago 1, Illinois

INTERNATIONAL HARVESTER

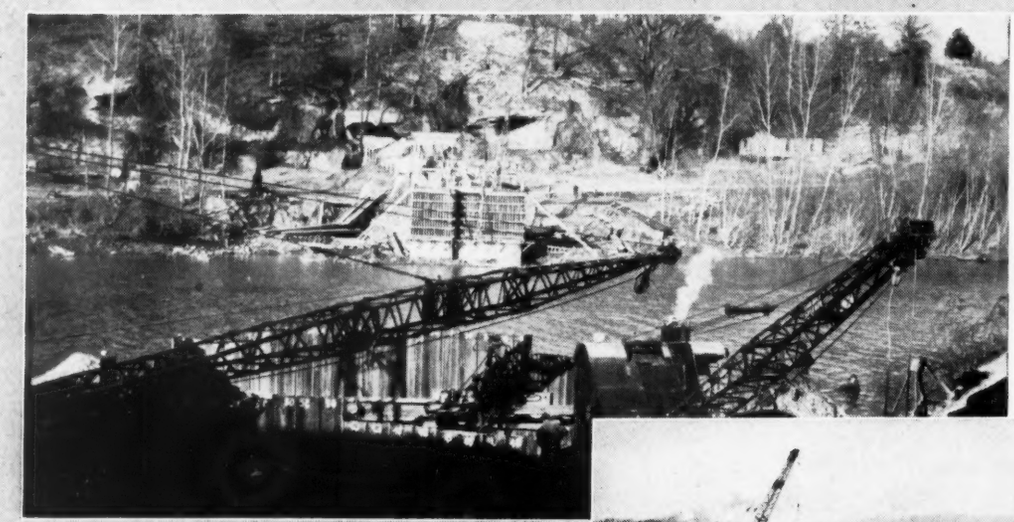
Industrial Power

"We save time with

Gulf Quality Products

and keep our repair costs low"

says Harry O. Wyse of Lexington, Kentucky



Kentucky Road Oiling Company, Frankfort, Ky., and Harry O. Wyse, Lexington, Ky., have the contract for building the urgently needed Green River Bridge at Aberdeen, Ky. This 1482 ft. span will cost $497,128.00 and involves the driving of 7½ mi. of steel piling, pouring 6,395.7 cu. yds. of concrete, with steel reinforcement.

"As on previous jobs, we're enjoying top performance from our equipment with Gulf quality lubricants and fuels," says Mr. Wyse. "Gulf products helped us keep going at a fast pace right through the winter months, with no loss of time due to changeable weather conditions and high water."

On all types of construction projects, Gulf quality petroleum products play an important part in keeping the job rolling smoothly. Gulf lubricants provide a higher degree of protection —and Gulf fuels help contractors get an extra margin of performance from their mechanized equipment. Result: speedier, more profitable jobs!

Write, wire, or phone your nearest Gulf office and arrange to use Gulf quality lubricants and fuels on your next contract. They are quickly available to you through 1200 warehouses located in 30 states from Maine to New Mexico.

Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:

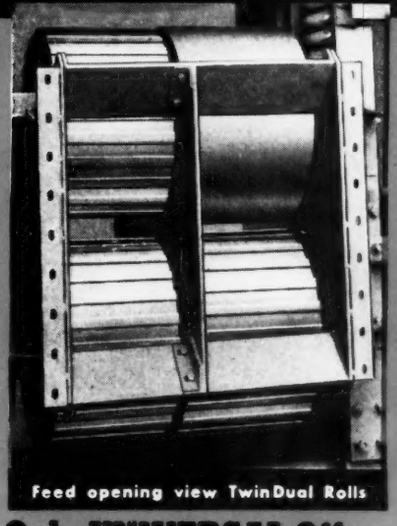
Boston · New York · Philadelphia · Pittsburgh · Atlanta
New Orleans · Houston · Louisville · Toledo

GULF

Announcing the NEW

UNIVERSAL TWINDUAL* MASTER

SENSATION OF THE GRAVEL PIT



Feed opening view TwinDual Rolls

Only UNIVERSAL Offers TWINDUAL* ROLLS

Two stages of secondary reduction in one crusher. Doubles normal primary jaw crusher output. Its use in gravel plants is the greatest achievement in a generation. The only really new and different post war plant being offered on the market today.

***PATENTED**

No equal for capacity where crushing must be done. In field tests, under identical pit conditions, production is more than double the output of larger, standard conventional plants.

FEATURING

- **THREE STAGES OF REDUCTION WITH ONLY TWO CRUSHERS**
  FIRST STAGE—JAW CRUSHER
  SECOND AND THIRD STAGES—TWINDUAL* ROLLS
- **TOP CAPACITY WITH MINIMUM WEIGHT AND POWER REQUIREMENT**
- **ROLLER BEARING THROUGHOUT FOR SMOOTH, BALANCED OPERATION**
- **READY PORTABILITY, QUICK AND EASY SET-UP**
- **MEETS HIGHWAY REQUIREMENTS**

•

WRITE FOR COMPLETE INFORMATION

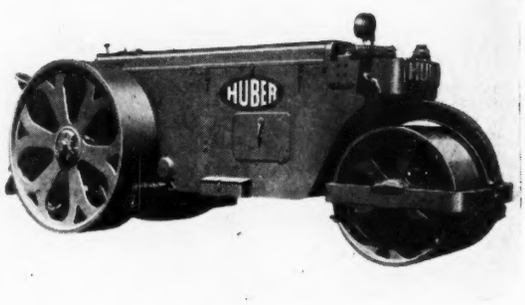
UNIVERSAL ENGINEERING CORPORATION
327 8th Street N. W., Cedar Rapids, Iowa

40 YEARS OF PROGRESSIVE SERVICE TO THE CRUSHING INDUSTRY

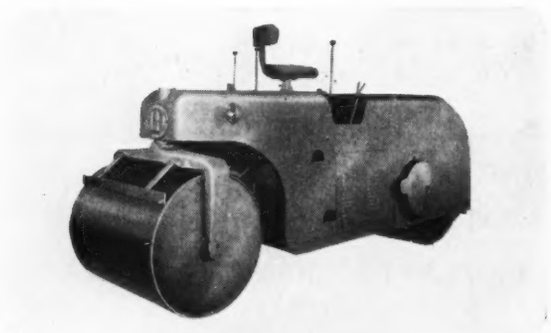
WHAT INTERESTS YOU MOST IN A ROAD ROLLER OR MAINTAINER?

Isn't it ability and capacity to do the jobs for which they are intended quickly and at the lowest possible cost?

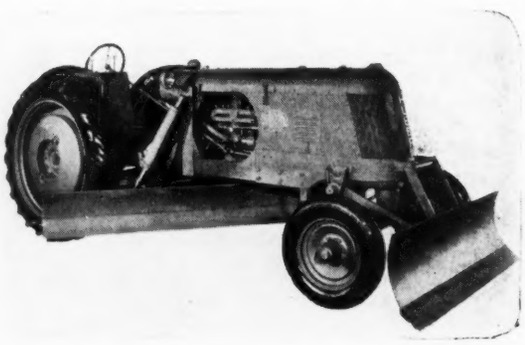
Then look no further than Huber 3-Wheel Rollers, Huber Tandem Rollers, and the popular Huber Maintainer, for in all three of these dependable road building and maintenance machines you have the very things for which you are looking. They have the simple design that reduces maintenance to a minimum; the speed, power, and stamina to make short work of any road job, and offer the maximum in operating economy based on a thorough knowledge of your requirements. Why not talk this over with your Huber Distributor?



HUBER 3-Wheel ROLLERS
Automotive type, built in sizes from 5 to 12 ton.



HUBER TANDEM ROLLERS
Variable weight, built in sizes from 3 to 12 ton.



HUBER MAINTAINER—A versatile machine that also serves as a bulldozer, lift-loader, patch roller, snowplow, or rotary boom.

THE HUBER MFG. COMPANY • MARION, OHIO, U. S. A.

HUBER

3 Wheel • Tandem
ROAD ROLLERS *and* MAINTAINERS

FOR THE FIRST TIME!

A UTILITY Jackhamer

Having UTILITY WEIGHT
REAL DRILLING POWER
AUTOMATIC ROTATION
Air Operated

This amazingly *powerful* Jackhamer weighs only 14 lbs and can be used wherever *light weight* is of first importance. It handles easily on a scaffold or ladder and makes short work of holes for hangers, anchor bolts, pipe, conduit, dowels, and reinforcing rod. It is ideal for plug and feather work.

The "J-10" tears out brick work for doorways and windows or cuts anchors for girders and joists. It is used for chiseling and channeling and for vibrating concrete forms.

At last, here is a real Rock Drill—*air operated*—built for plant maintenance work. It is no longer necessary to use make-shifts. The "J-10" UTILITY Jackhamer is fast, powerful, easy to handle, has strong rotation and hole blowing and uses standard Jackbits. Buy a J-10 UTILITY Jackhamer to save TIME AND MONEY.

The "J-10" UTILITY Jackhamer is built by the world's largest manufacturer of Rock Drills and Compressors

29-5

Ingersoll-Rand

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To a Movie Star, It's the "OSCAR"

To a TRUCK MIXER, It's

2 CUBIC YARD MIXER
GUARANTEED TO HOLD, MIX AND AGITATE ITS RATED CAPACITIES AND CERTIFIED TO COMPLY WITH TRUCK MIXER MANUFACTURERS BUREAU STANDARDS AS APPROVED BY N.R.M.C.A.
3 CUBIC YARD AGITATOR
N.R.M.C.A. REGISTRY No.

To a motion picture star, the Academy Award "Oscar" represents the pinnacle of achievement.

In the field of ready-mix concrete, the award of the Truck Mixer Bureau's rating plate is equally indicative of achievement. For the award of this plate means that the mixer has successfully met the standards set up by the Bureau for your protection. Drum capacity is *exactly* that stated on the plate. It's your protection against "outlaw" sizes . . . your guarantee of accuracy.

Remember, when you see the Bureau rating plate on a truck mixer, you can buy with confidence . . . operate with accuracy.

Truck Mixer Manufacturers Bureau

Affiliated with the National Ready Mixed Concrete Association

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CONCRETE TRANSPORT MIXER CO.
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Production is the Payoff...

...with FIRESTONE TIRES *and* PROJECT SERVICE

YOUR trucks and equipment pay off when they keep rolling—keep producing—at maximum capacity. That's where we come in . . . with Firestone tires and Project Service. This cost cutting combination eliminates downtime due to tire failure. Increased production is your payoff.

Firestone tire service engineers will analyze your operation, recommend the tires specifically built for that type of work. They will help you install an inspection and maintenance schedule which will insure correct tire use. If you wish, these engineers will assume full responsibility for the successful operation of every tire on your project.

For further details, and without obligation, write Project Service Engineering, The Firestone Tire & Rubber Company, Akron, Ohio.

P. S. You get a bonus too . . . many extra hours of tire life at no extra cost.

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OFF-THE-HIGHWAY TIRES

CURRENT DELIVERY on a HYSTAWAY for installation ON YOUR USED "CATERPILLAR" D7 or D6 Tractor

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Sold by
"Caterpillar" Distributors
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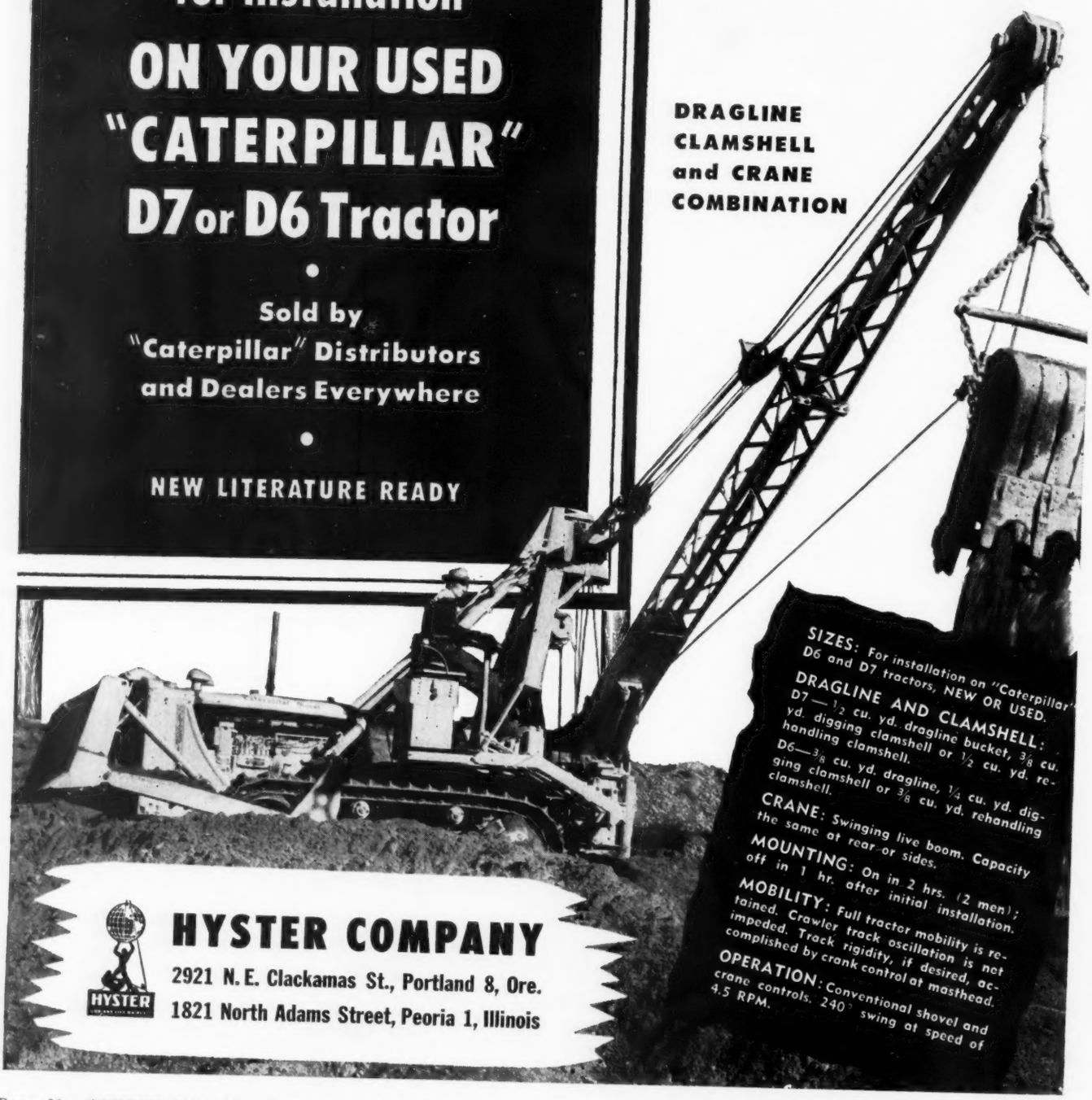
NEW LITERATURE READY

"THE NEWEST POST-WAR TRACTOR TOOL"

"a low investment tool for used or new tractors"

"MORE WORK ON MORE JOBS WITH A HYSTAWAY"

DRAGLINE
CLAMSHELL
and CRANE
COMBINATION



SIZES: For installation on "Caterpillar" D6 and D7 tractors, NEW OR USED.

DRAGLINE AND CLAMSHELL: D7 — 1/2 cu. yd. dragline bucket, 3/8 cu. yd. digging clamshell or 1/2 cu. yd. rehandling clamshell.
D6 — 3/8 cu. yd. dragline, 1/4 cu. yd. digging clamshell or 3/8 cu. yd. rehandling clamshell.

CRANE: Swinging live boom. Capacity the same at rear or sides.

MOUNTING: On in 2 hrs. (2 men); off in 1 hr. after initial installation.

MOBILITY: Full tractor mobility is retained. Crawler track oscillation is not impeded. Track rigidity, if desired, accomplished by crank control at masthead.

OPERATION: Conventional shovel and crane controls. 240° swing at speed of 4.5 RPM.

HYSTER

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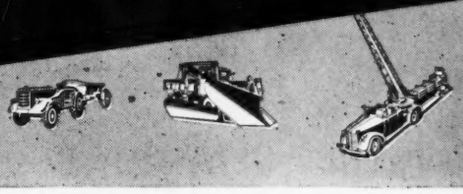
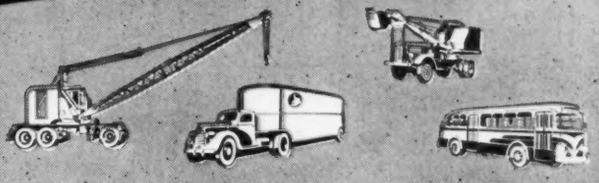
9 GOOD REASONS

for using VICKERS Hydraulic POWER STEERING





1. **FINGER-TIP STEERING** Finger pressure steers the heaviest vehicle equipped with Vickers Hydraulic Steering. Short, quick, effortless turns ease the job of parking, backing, loading and maneuvering in city traffic. On the open road there is no lag or road wander.

2. **HEAVIER FRONT WHEEL LOADING** Many steering difficulties resulting from heavy front wheel loading are overcome by Vickers Hydraulic Power Steering. It provides light, easy steering with heaviest front wheel loading.

3. **LOWER STEERING RATIOS** Present high steering ratios can be lowered substantially with Vickers Hydraulic Power Steering.

4. **LESS DRIVER FATIGUE** The Vickers Hydraulic Power Steering Unit takes all the steering strain —the driver has none. Anxiety about unsafe tires and hazardous road conditions is relieved.

5. **LIGHTER CONSTRUCTION** An over-all weight reduction can be made in the construction of steering gears, housings and columns since all stress and shock are borne by the booster unit and vehicle frame.

6. **GREATER SAFETY** Blowouts, soft shoulders, ruts, cross winds, road obstructions or sudden stops—none affect steering. In event of engine failure or damage to the hydraulic system, steering automatically reverts to direct mechanical action.

7. **SHOCKLESS** On the road or off the road, the driver feels no road shock or wheel fight.

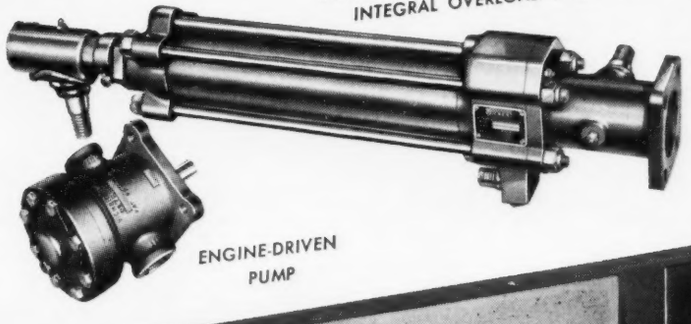
8. **LOWER COST** Simplified installation and lowered manufacturing costs due to increased production make the price per unit lower now than ever before.

9. **ADAPTABLE** Only minor alterations needed to apply Vickers Hydraulic Power Steering to new or existing vehicle designs.

Vickers Hydraulic Power Steering has been in successful use for more than 16 years. The redesigned unit with integral relief valve has had more than a year of testing on heavy buses and trucks under most severe operating conditions.

Write for Bulletin 47-30 for full information.

3170



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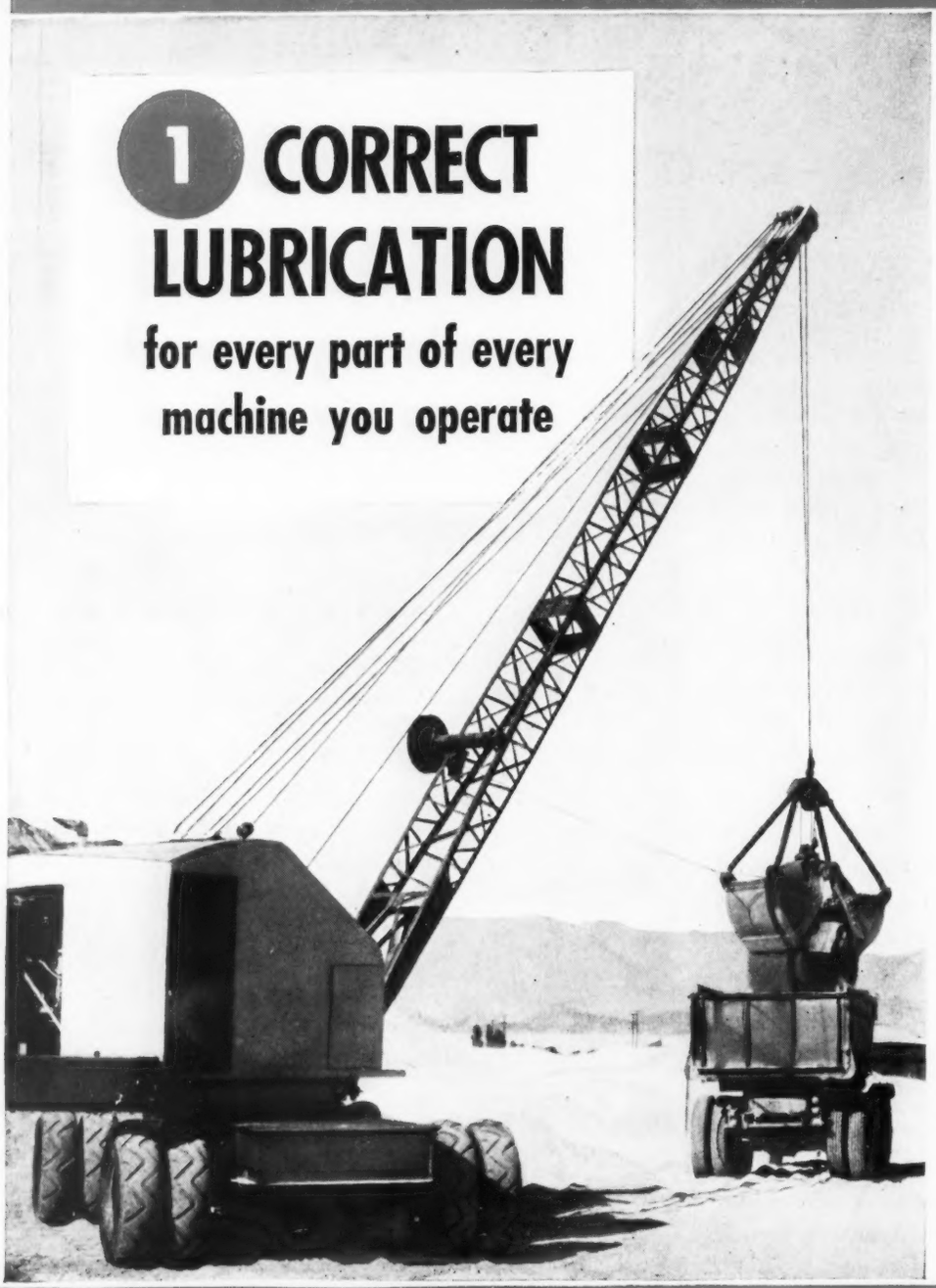
ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

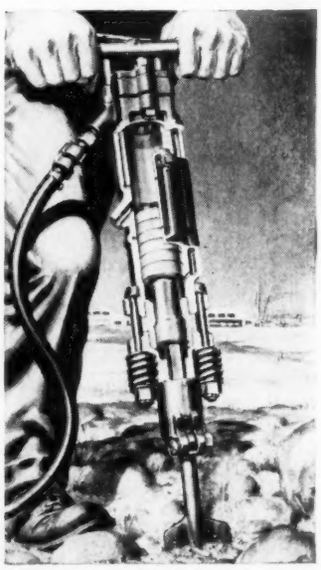
NOW — a Workable 2-Point Program



NO MATTER how specialized —how varied—*or how tough* your lubrication requirements, Socony-Vacuum can meet them!

We offer: top-quality lubricants for power shovels, ground breakers, air tools of all kinds ...oils that guard against gear and bearing wear, fight heat and friction . . . oils that help keep Diesel and gasoline engines *cleaner*—freer of harmful deposits.

Let Socony-Vacuum help you minimize breakdowns and repairs—help keep hard-pushed machines on the job *full* time—with scientifically *correct lubrication* for every application.



Rely on SOCONY-VACUUM CONTRACTORS' SERVICE

—designed to SPEED WORK-PROGRESS!

2

TIME-SAVING SERVICE

for all divisions of your operation

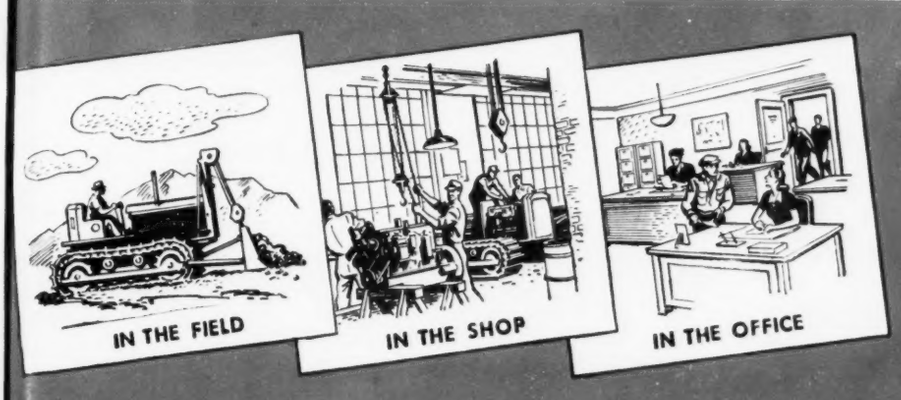
HERE ARE just a few of the ways we help you ease tight work schedules, meet and beat contract deadlines:

1. Supply you with tested maintenance schedules adapted to *your* equipment, *your* set-up;
2. Give you practical help on "problem" machines;
3. Provide information on the Do's and Don't's of Correct Lubrication;
4. Supply the requirements for oils and greases for all of your equipment.
5. Help simplify lubricant inventory problems.

★ ★ ★

On the job, in the shop and in the office . . . all through your operation, this service saves valuable time! See your Socony-Vacuum Representative today for full details.

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: Magnolia Petroleum Company, General Petroleum Corporation



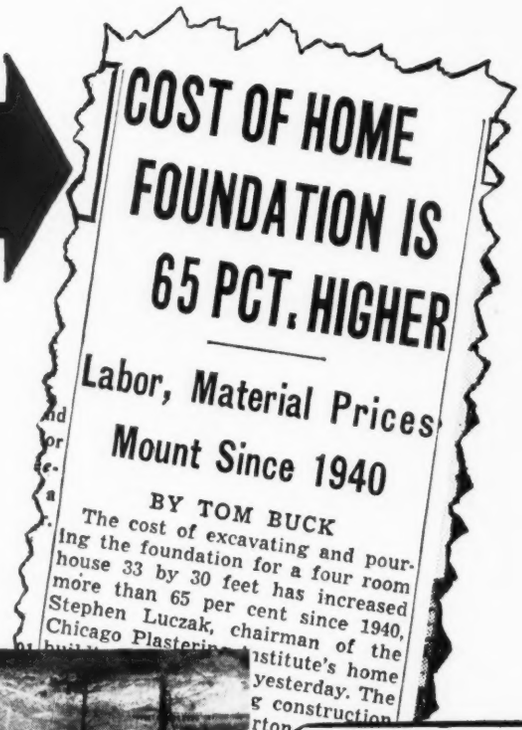
SOCONY-VACUUM

Use UNI-FORMS...

cut your form costs in ½

Because they are faster to erect, easier to strip and require alignment on one side only, UNI-FORMS can cut your forming costs at least 50%.

UNI-FORMS are strong, lightweight, steel-framed, plywood faced panels which have all the advantages of a steel form *plus* the important advantage of a nailing surface.


COST OF HOME FOUNDATION IS 65 PCT. HIGHER
Labor, Material Prices Mount Since 1940
BY TOM BUCK
The cost of excavating and pouring the foundation for a four room house 33 by 30 feet has increased more than 65 per cent since 1940, Stephen Luczak, chairman of the

Prefabricated filler panels handle any special requirements.
Four men erected complete form in 4 hours.
One man easily handles these 2' x 8' UNI-FORMS.
LET ME SHOW YOU HOW TO BEAT THIS!

Window frames, conduits, vents are nailed directly to UNI-FORM.
Special conditions – inside corners, pilaster, filler are easily handled.
One side of form is erected.

UNIVERSAL FORM CLAMP Company
Concrete Form Specialists for 34 Years
Founded 1912
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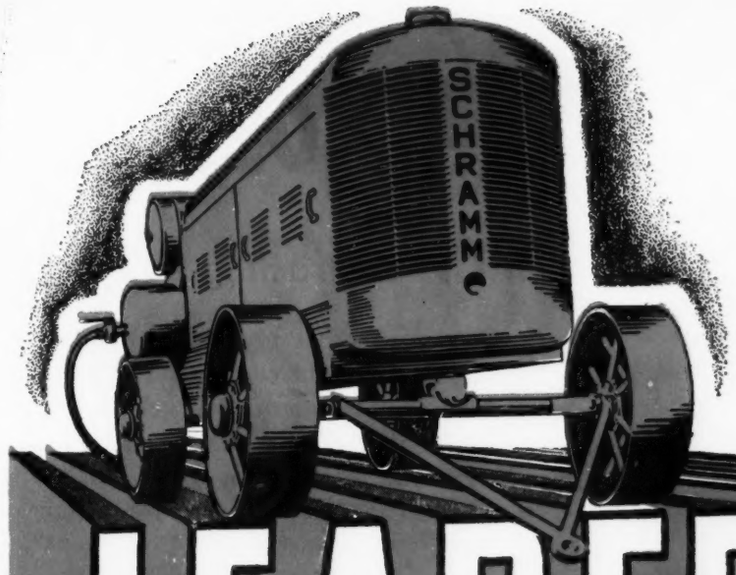
Better Service Wherever You Build

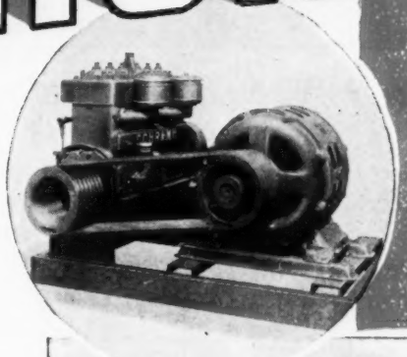
The UNI-FORM System of Wall Form Construction is providing better, more economical concrete forming on:

HOUSING • SCHOOLS • HOSPITALS • FACTORIES
THEATRES • STADIA • SEWER AND WATER SYSTEMS
TREATMENT AND DISPOSAL PLANTS

Concrete Forms • Form Ties • Brick Ties • Reinforcing Steel Supports and Building Specialties



LEADERSHIP



SINCE producing the first portable Compressor in 1908, SCHRAMM LEADERSHIP has been constantly maintained. Standards of construction continually revised, until today Schramm offers the most advanced line of air producing equipment that can be found anywhere. Modern manufacturing methods together with suitable high grade materials result in a unit that gives dependable trouble free services — always.

There is a rugged Schramm unit designed to take care of your Compressed Air needs. Contact branch nearest you or consult our engineering department for recommendations.

SCHRAMM INC.

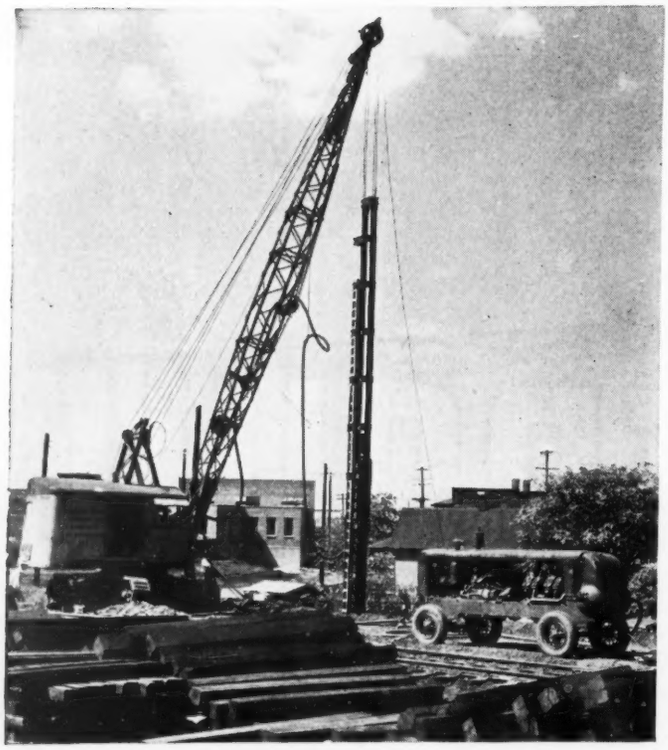
THE COMPRESSOR PEOPLE
WEST CHESTER
PENNSYLVANIA

Air **WHERE, WHEN AND AS MUCH AS YOU NEED.**

SPEED WORK *and* CUT COSTS

with **CP** *contracting equipment*

In the wide range of CP products the contractor will find just the right compressor, pneumatic tool, sinker drill, wagon drill, backfill tamper, and other equipment, to cut costs and assure profits. For full information get in touch with your nearest CP office, or write for a copy of Catalog 600, "CP Construction Equipment".



CP-500 PORTABLE COMPRESSOR SUPPLYING AIR FOR PILE DRIVING

Wherever there's need for air a CP Compressor will furnish it economically and reliably. The illustration shows how conveniently a CP-500 Portable Compressor can supply the air required for a heavy field job. The Gradual Speed Regulator adjusts engine speed to air demands, so that the engine never runs at any speed higher than necessary, effecting large savings in fuel and maintenance.

A HEAVY BLOW—WITH NO KICKBACK

CP-117 Demolition Tool has ample power for the heaviest type of work. Easy to handle; has no kickback; weighs 75 pounds with spring retainer, 78 pounds with latch retainer. Swivel air inlet prevents air hose from kinking.

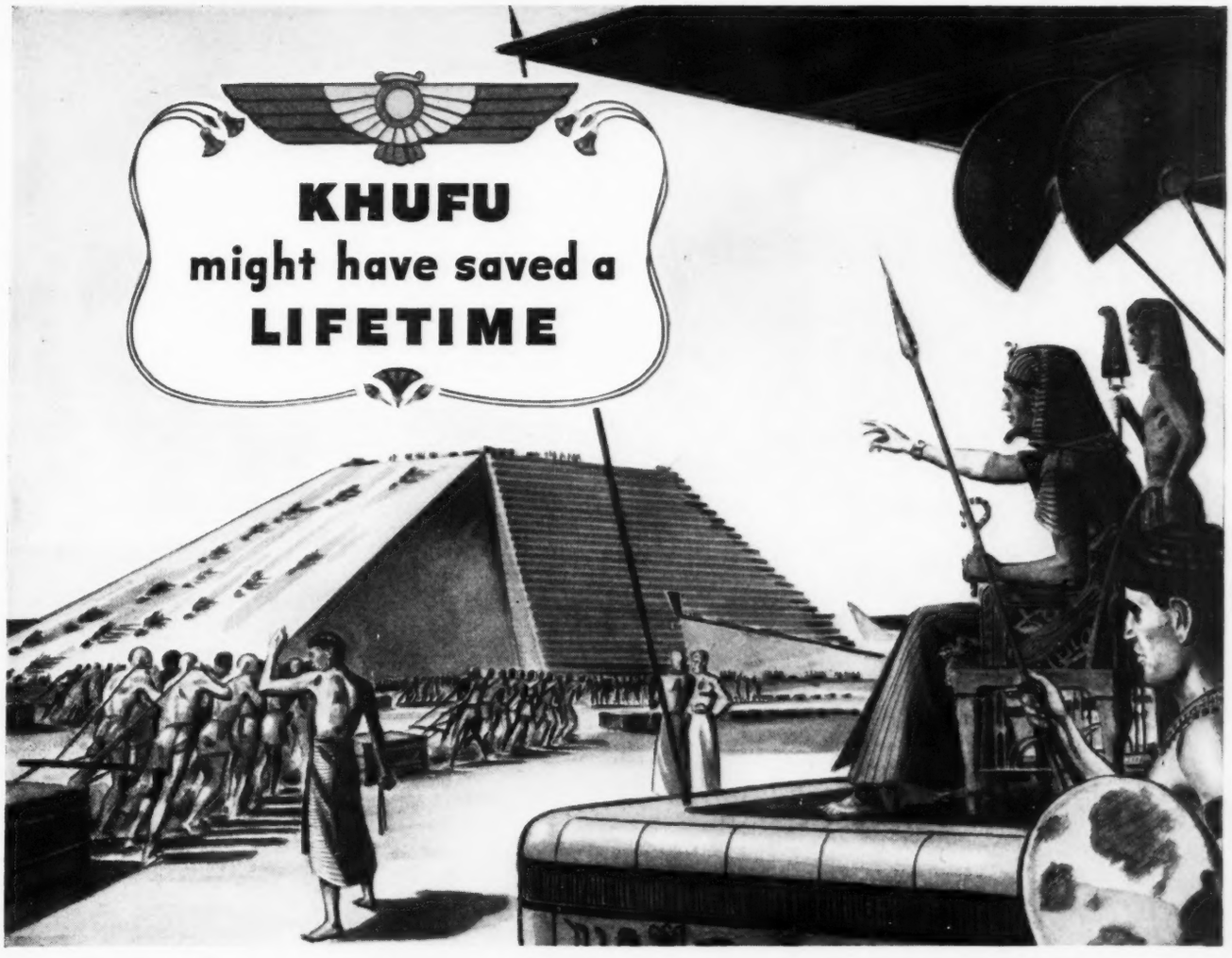
SAVE TIME IN WOOD BORING

For drilling holes in piers or bulkheads, in trestle work, and for other similar applications, CP Pneumatic Rotary Wood Borers are great time-savers. Furnished in 1", 2" and 4" sizes; all reversible.

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES



KING KHUFU had only *slave*-power with which to build the greatest of the pyramids. With engine-power, he might have saved a lifetime and the lives of 300,000 slaves.

Today, mightier and much more useful structures spring from dream to drawing board to reality in relatively short spans of time. Modern construction equipment powered by internal-combustion engines makes this possible. For today, the machine is the slave of man. Great dams, soaring bridges, towering buildings and broad highways are ours without backbreaking toil and wasted flesh and blood.

AMERICAN BOSCH CORPORATION, SPRINGFIELD 7, MASS.

PARTNERS IN THE PROGRESS OF POWER

American Bosch works closely with and for the internal-combustion-engine industry in three vital ways:

ENGINEERING. 1,200,000 *man-hours* of it have been poured into Diesel Fuel Injection alone—other millions into Ignition.

PRODUCTION. *Premium performance* has been a consistent goal in the production of hundreds of thousands of Diesel injection systems and millions of electrical units.

MAINTENANCE. *The world over,* American Bosch authorized service stations keep the equipment operating efficiently.

AMERICAN BOSCH

DIESEL FUEL INJECTION • AUTOMOTIVE AND AVIATION ELECTRICAL PRODUCTS

Action and Power with "SUPERSOCKETS"

● When you want *action* and the safety of sure-gripping *power*, you can't beat Williams "Supersockets." These versatile wrenches, with their various combinations of handles, parts and socket types, provide greater speed even under adverse working conditions.

Williams "Supersockets" are available in 5 different patterns, with drives ranging from 1/4" to 1" square. Socket openings range from 3/16" to 3 1/8". Sold by Industrial Distributors everywhere.

J. H. WILLIAMS & CO., Buffalo 7, N. Y.

WILLIAMS

DROP-FORGINGS AND DROP-FORGED TOOLS

YOU CAN WRITE YOUR OWN TICKET WITH A . . . TL-20

ANY range of mobility, any type of boom and a long list of basic standard features that bring new speed, life and action to any operation—just check your needs, then write your own ticket from the TL-20 feature list for today's most modern shovel or crane in the ½ yd. class.

No other machine offers so much for its size with "on the job" records to prove the value of each and every feature. Your local Thew-Lorain distributor will gladly supply complete information.

THE THEW SHOVEL COMPANY • Lorain, Ohio

CHECK, COMPARE AND CASH IN ON THESE TL-20 FEATURES

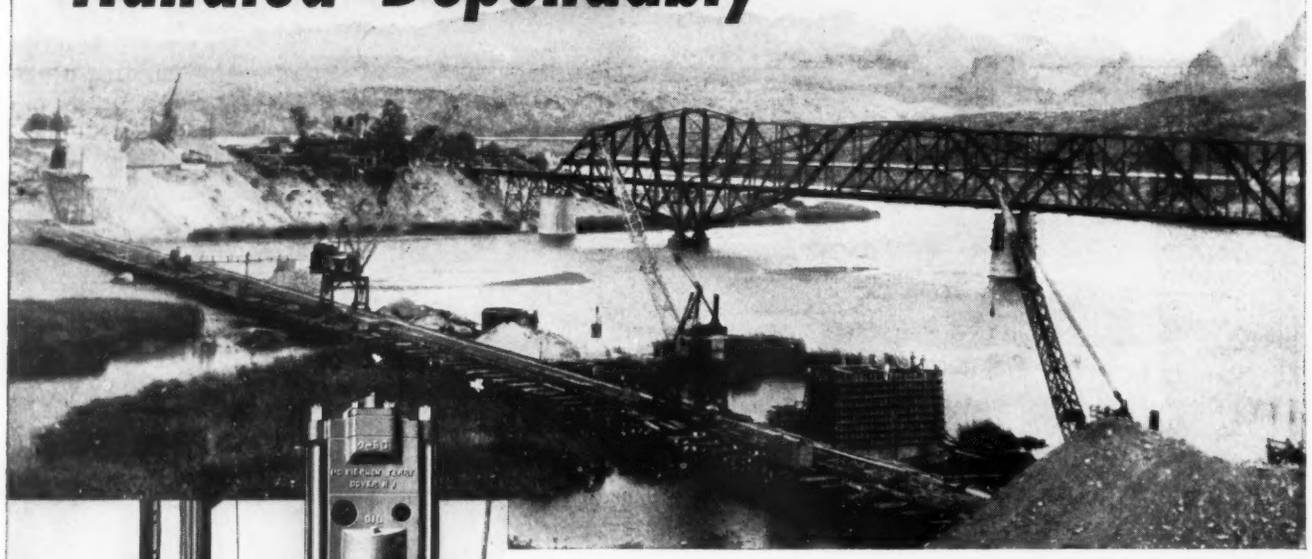
1. 9 Rubber-Tire Mountings Available
2. Chain Drive Crawler
3. Independent Rope Crowd Shovel
4. All-Purpose Crane Boom
5. Gooseneck Hoe Boom.
6. Unit Assembly—Easier Service
7. 5 Identical Clutches
8. Interchangeable Parts
9. Anti-Friction Bearings
10. Lights (Standard equipment)
11. Starter and Generator (Standard)
12. Electric Dipper Trip and Tagline
13. 2 Crawler Speeds (Standard)
14. "Full Circle" Crawler Steering
15. Drop Forged Crawler Treads
16. Oil-Enclosed Crawler Propelling Mechanism

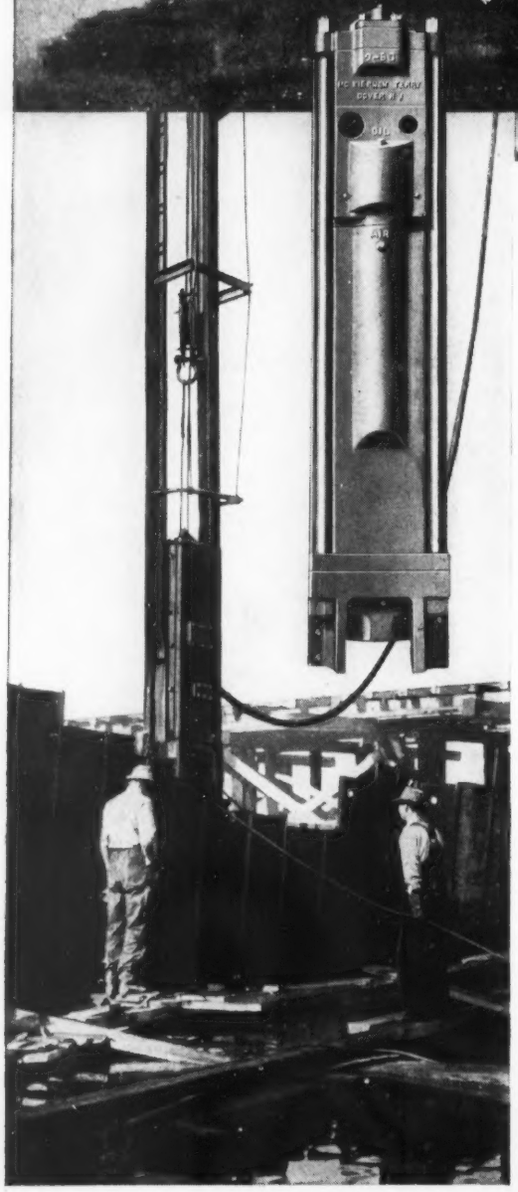
TL-20 dragline equipped with 35 ft. boom and ½ yd. bucket digging 2 miles of 18 ft. wide drainage ditch.

Thew Lorain TL-20

Reg. Trade Mark

BRIDGE BUILDING PROBLEMS
Handled Dependably





McKiernan-Terry Pile Hammers driving semi-circular double wall coffers in cemented volcanic gravel and boulders during construction of Santa Fe Railroad bridge (in foreground of upper photo), at Topock, Arizona. Highway bridge shown in background.

Whatever the soil penetration difficulty may be, whether sand, clay, compacted gravel or any other substance, contractors always know that McKiernan-Terry Pile Hammers will handle the job right. For more than fifty years McKiernan-Terry equipment has been a first choice on construction projects of every type calling for dependable foundation work.

A complete, standardized line of McKiernan-Terry Pile Hammers and Pile Extractors is now available for speedy delivery. Double-Acting Hammers in a range of ten sizes; double-acting extractors in two sizes; single-acting hammers in five sizes.

PILE HAMMER DATA FOR YOUR FILES

Write for McKiernan-Terry Pile Hammer Bulletins No. 55 and No. 57, and keep this valuable pile-driving information handy. Send today.

McKIERNAN-TERRY CONSTRUCTION EQUIPMENT

DOUBLE-ACTING PILE HAMMERS AND EXTRACTORS	SINGLE-ACTING PILE HAMMERS
HOISTING EQUIPMENT	PILE DRIVING RIGS
MARINE EQUIPMENT	BLACKSMITHS' POWER HAMMERS
	SPECIAL MACHINERY

Completely Designed, Engineered and Manufactured or Manufactured from Your Design. *Full Information on Request.*

MK-333

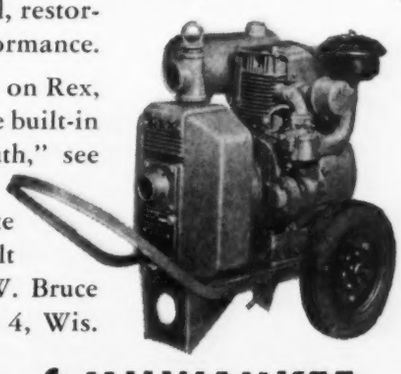
McKiernan-Terry
CORPORATION
Manufacturing Engineers

14 Park Row **New York 7, N. Y.**

"Reminds me of my Rex Pump!"

A Rex "Easy-Flow" Pump is always in the prime of life, thanks to its exclusive *adjustable* air peeler. For the priming efficiency of any self-priming pump is dependent upon its ability to peel air from the impeller. Rex assures top efficiency for the lifetime of the pump because Rex has the only peeler that can be adjusted to compensate for wear.

And, as a further aid to efficiency, Rex Pumps have a replaceable steel wearing plate that maintains the close tolerances between the side of the impeller and the volute so necessary for proper maintenance of vacuum. When wear takes place, the plate can be easily and inexpensively replaced, restoring original performance.



For all the facts on Rex, the pumps with the built-in "Fountain of Youth," see your local Rex Distributor or write direct to Chain Belt Company, 1664 W. Bruce Street, Milwaukee 4, Wis.

CHAIN BELT COMPANY *of* MILWAUKEE

REX

CONSTRUCTION MACHINERY

PUMPS

PAVERS

PUMPCRETES

MOTO-MIXERS

MIXERS

INCREASE PRODUCTION with extra-capacity

15 m.p.h. Top Speed

Positive Power Steer

Electric Control

24.00x29 Tires

225 h.p. Diesel

Weighs 20¼ Tons Empty

LETOURNEAU LET EQUIPMENT

See your LeTourneau Distributor NOW for complete information on prices and delivery

on your BIG yardage jobs

"B" TOURNAPULL

CHECK HOURLY YARDAGE PERFORMANCE

Haul — One Way	Sand	Common Earth	Dense Clay
300′	426	379	331
500′	390	347	303
1000′	322	286	250
1500′	274	244	213
2000′	239	213	186
2500′	212	188	164
3000′	190	169	148
3500′	172	153	134
4000′	157	140	122
5000′	145	129	111
10000′	78	69	60

The above production is based on good working conditions, negligible grades, level cuts, efficient management, and a 60-minute per hour operating efficiency.

Tournapull—Trademark Reg. U.S. Pat. Off.—Cdn.

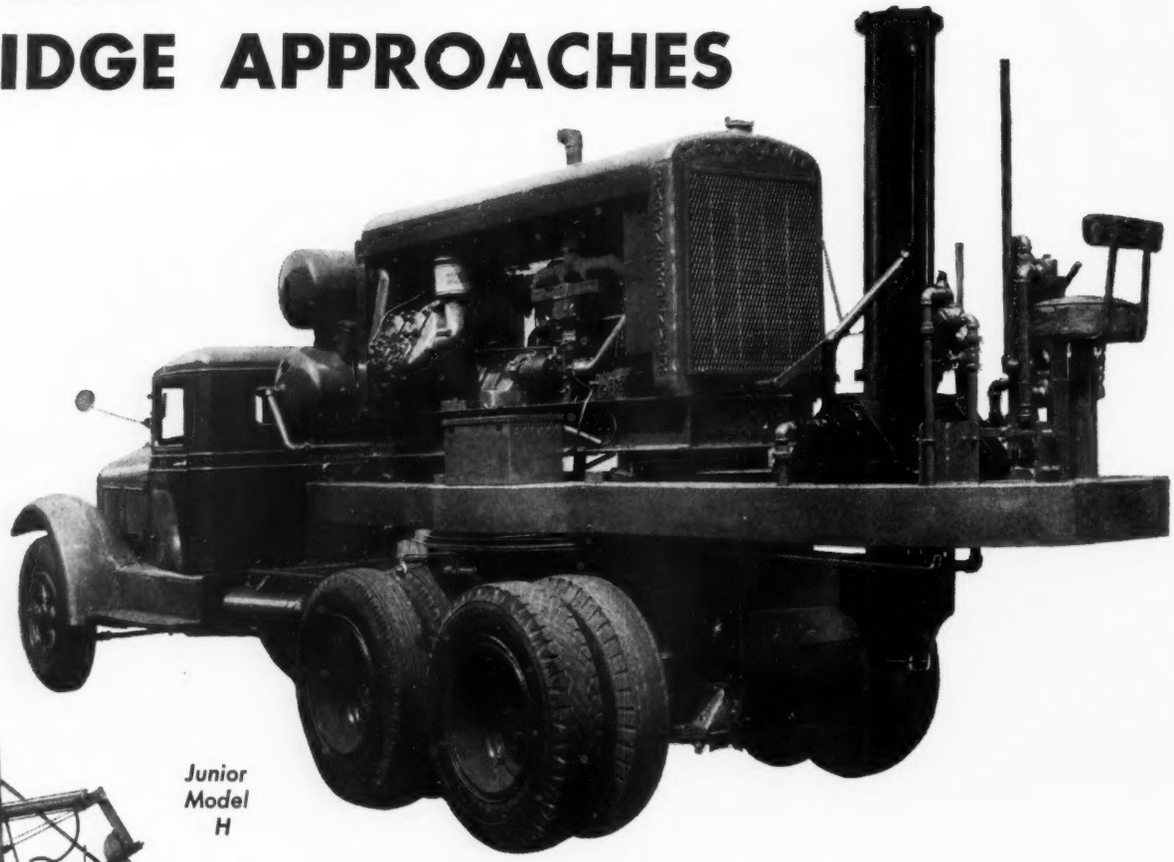
LETOURNEAU
PEORIA, ILLINOIS

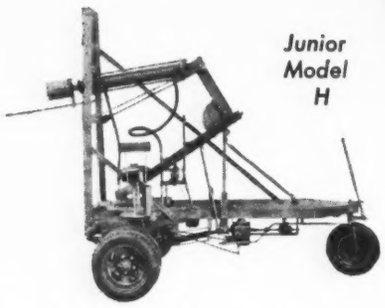
JOB-PROVED
Over 5210 Built and Shipped

TOURNAPULLS

FOR LOWEST NET COST PER YARD

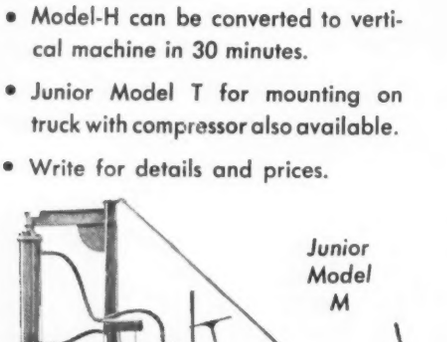
UNEQUALED FOR TAMPING TRENCH AND BRIDGE APPROACHES





Junior Model H

- Model-H can be converted to vertical machine in 30 minutes.
- Junior Model T for mounting on truck with compressor also available.
- Write for details and prices.



Junior Model M

RAPID
PAVEMENT BREAKER MACHINES

- Unequaled performance in concrete breaking.
- Fastest pneumatic method.
- Not a drop weight, but a pneumatic controlled blow.
- Average working speed, 55 blows per minute.
- Saves labor-time-dollars.
- Built to have a low upkeep cost.
- Breaks to any size desired.
- Adapted to inside or outside work.
- Increases your compressor output.
- Ideal for cutting trench and tamping backfill.
- The profitable addition to your line of equipment.
- Heavy-duty machine equipped with air motor which pivots the unit on the truck bed.
- Junior Trailer Models are equipped with air motor that propels machine and swings the boom.

R. P. B. CORP.

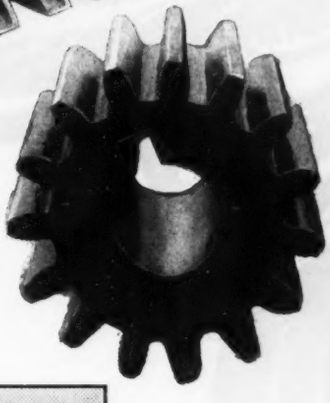
1517 Santa Fe Ave. Los Angeles 21, Calif.

THE "MANGANESE STEEL CURTAIN"

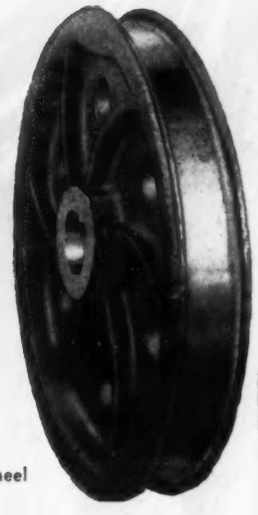
AMSCO
CAST PARTS that protect industry AGAINST WEAR

Dipper Lip

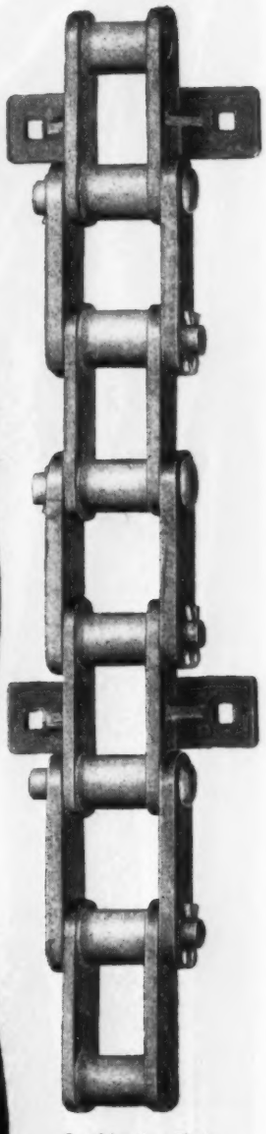
Cone Crusher Mantle



Clinker Kiln Spur Pinion



Larry Car Wheel



Combination Chain with Attachments

Dredge Cutter Head

STOP COSTLY REPLACEMENTS AND REPAIRS

Install Amsco Manganese Steel Cast Parts — they keep serving where ordinary metals rapidly wear away . . . they stand up under service abuse that fractures other metals. Designed to last and made of "The Toughest Steel Known," Amsco parts are a must for industrial equipment handling the tough jobs.

Continued impact only serves to harden the surface of austenitic manganese steel up to 550 Brinell — develops a smooth "plow-share" finish that resists abrasion . . . yet the body metal always retains its basic toughness.

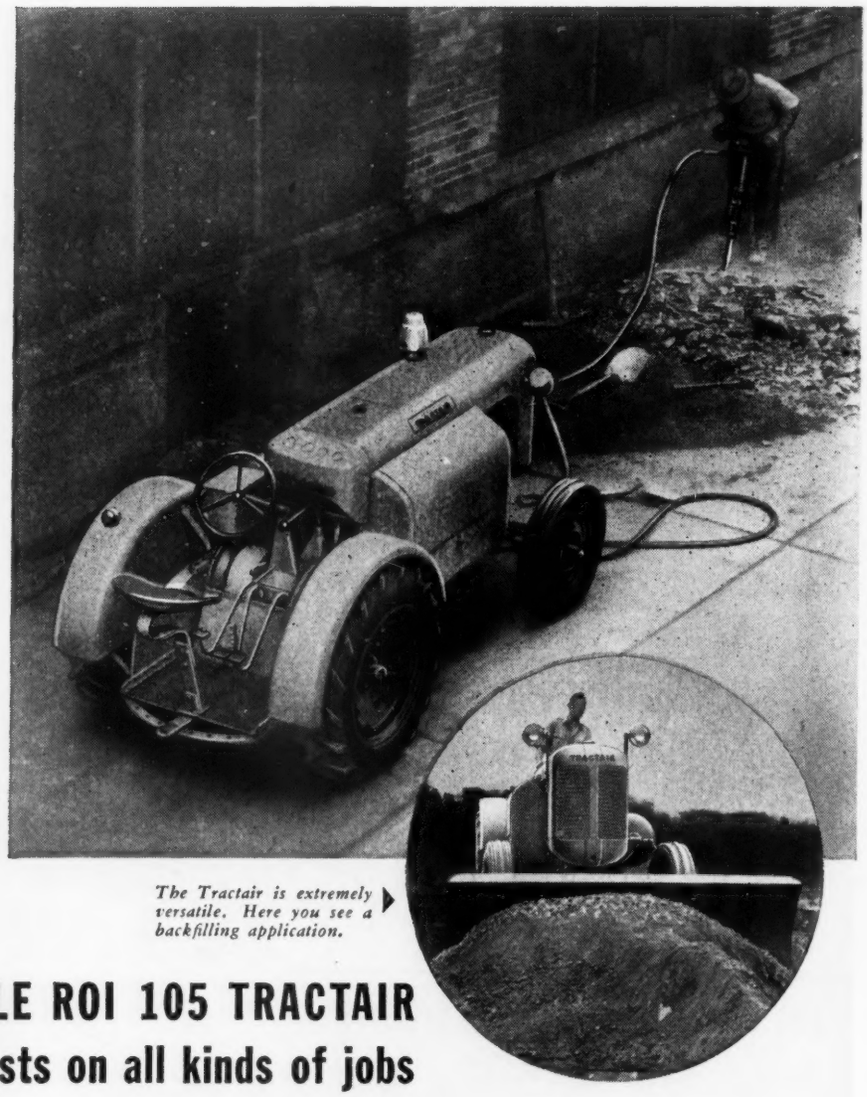
Amsco specializes in cast manganese steel parts that have to take it . . . in dredging, crushing, pulverizing, excavating, road-building, mining and quarrying . . . for almost any use that requires real service under the most adverse operating conditions. Write for bulletins and information today.

AMERICAN Brake Shoe COMPANY

AMERICAN MANGANESE STEEL DIVISION
CHICAGO HEIGHTS, ILL.

Foundries at Chicago Heights, Ill., New Castle, Del., Denver, Colo., Oakland, Calif., Los Angeles, Calif., St. Louis, Mo.
Offices in principal cities. In Canada: Joliette Steel Limited, Joliette, Que.

Jack of many trades -and master too!



The Tractair is extremely versatile. Here you see a backfilling application.

The versatility of LE ROI 105 TRACTAIR reduces time and costs on all kinds of jobs

Every day, many of you must have hundreds of little nuisance jobs to do — jobs that can be done better, faster, and at less cost with air power. If so, here's just the unit you've been looking for — Le Roi's new Tractair.

Tractair is the only completely integral tractor-compressor available. It is neat, compact, sturdy, and combines the utility of a 105-cfm compressor with the versatility of a 35-hp wheel tractor.

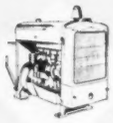
It is designed for interchangeable "front-end" equipment such as loader, snow plow, rotary broom, backfill blade, cargo and material lifts, crane arm, etc. It can also be equipped with a Le Roi mowing attachment.

Truly a multi-purpose unit, Tractair sweeps, mows, and loads— tows, plows, and pulls—drills, bores, and digs. Its remarkable mobility brings all these services to places heretofore inaccessible.

Powered with the famous Le Roi heavy-duty valve-in-head engine, and Econotrol-equipped, Tractair provides unusual economy along with its money-saving usefulness. Ask your Le Roi distributor about Tractair today — write for latest bulletins. They list complete specifications.

Le Roi-Cleveland Rock Drills

*Le Roi Airmaster**



Le Roi Heavy-Duty Engine

Le Roi Engine-Generator Set

LE ROI COMPANY

MILWAUKEE 14, WISCONSIN

NEW YORK • WASHINGTON
CLEVELAND • MILWAUKEE • BIRMINGHAM
TULSA • BUTTE • SAN FRANCISCO

*Reg. U.S. Pat Off.

TIP FOR TRUCKERS:

They're safe because they're tough. Rayon cord carcass gives extra strength, extra mileage.

ROLL your trucks on Armstrongs, and make sure you get there! No other tire can compare with the "guts" of Armstrong's *Rhino-Flex* carcass. It's made with tighter twisted rayon cord . . . "gives" with impact . . . resists road shocks . . . guarantees you a smoother, more cushioned ride.

What's more, the new Armstrong tread with thousands of gripping edges holds the road better, helps you stop quicker, and gives you greater control of your truck under all driving conditions.

Yes, one trucker tells another—in New York, in St. Louis, in San Antonio—"You really move along with Armstrong." So take the tip and see for yourself why truckers swear by this tough, longer-wearing, super-safe Armstrong Tire. You can't get greater value at any price.

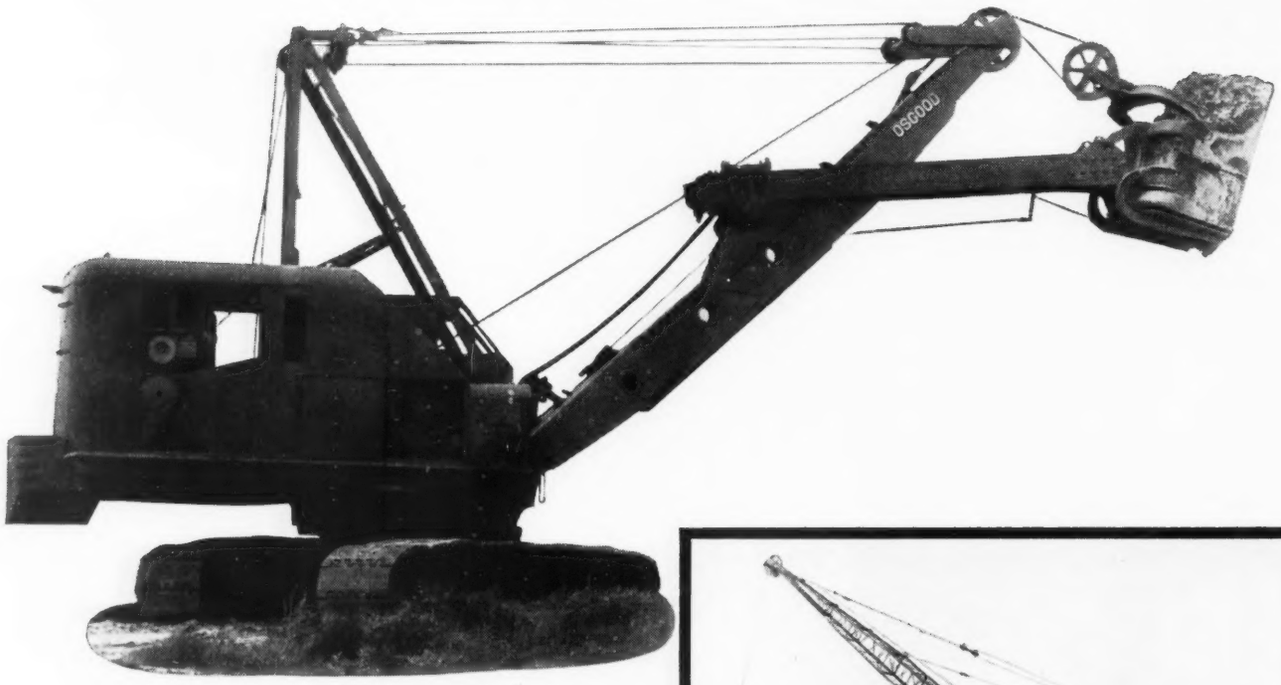
YOU PUT SAFETY FIRST WHEN YOU RIDE ON

ARMSTRONG Rhino-Flex TIRES

Manufacturers of Quality Tires and Tubes since 1912 · General Offices and Plant—460 Elm Street, West Haven 16, Conn.

Built FOR THE *Big* JOBS!

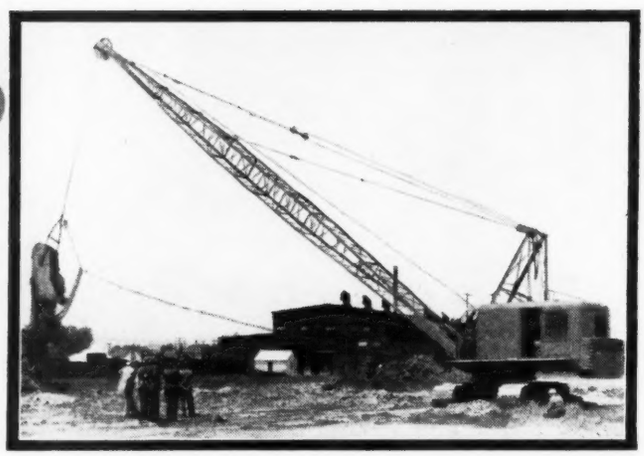
The OSGOOD *Type* 100



SHOVEL • DRAGLINE • CLAMSHELL • CRANE

From crawler treads to point sheaves, the new OSGOOD Type 100 is designed and built to handle the big jobs. As shovel, dragline, clamshell or crane, the Type 100 will wade right into the toughest work you have and turn in a profit-making performance. Powerful and sturdy, the Type 100 is completely air-controlled, providing an ease of operation that means just as much production in the last hour of the day as in the first.

Air booster brakes and air-controlled steering contribute to the smooth performance of the Type 100. A conveniently arranged bank of hand levers and foot pedals control every operation of this new machine. Positive air control enables the operator to get the "feel" of this powerful unit instantly. Self-cleaning treads, oversize point sheaves, a new quiet-operating swivel-type fairlead and a host of other features of interest to every construction, excavating and material handling engineer are completely described in the new Type 100 bulletin. Get your copy now!



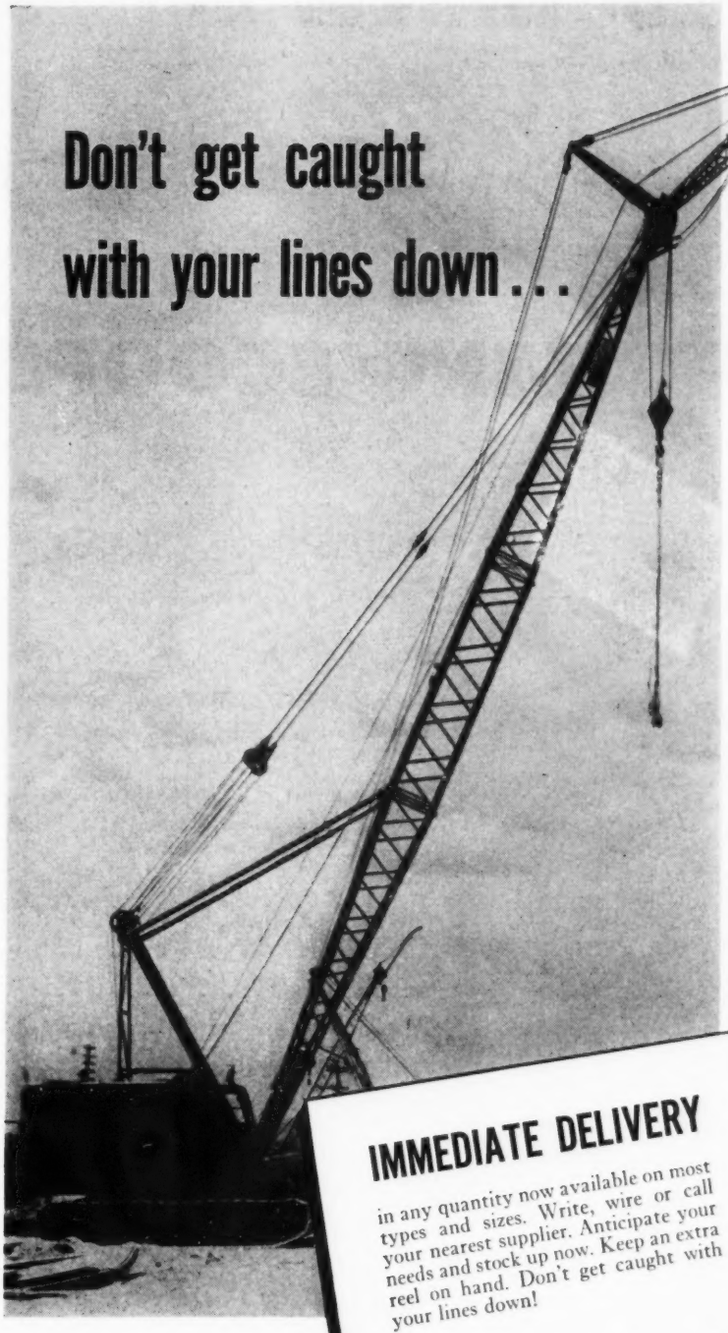
FREE BULLETIN READY NOW
Write today for your copy!

POWER SHOVELS • CRANES • DRAGLINES • CLAMSHELLS • BACKHOES • PILE DRIVERS

THE OSGOOD CO. O-G THE GENERAL CO.
EXCAVATOR

MARION OHIO

DIESEL, GASOLINE OR ELECTRIC POWERED • ⅜ TO 2½ CU. YD. • CRAWLERS & MOBILCRANES



Don't get caught with your lines down...

RIG UP WITH *Tiger Brand*

FOR TROUBLE-FREE SERVICE

● In U·S·S American TIGER BRAND Wire Rope, you have a rope with the strength, toughness and flexibility needed to withstand the severe stresses and abrasive wear to which your hoisting and hauling lines are constantly subjected.

Made to close tolerances and unvarying quality standards, TIGER BRAND's Excellay Preformed construction eliminates or lessens common causes of rope trouble—rotating in the grooves, bending fatigue, kinking, drum crushing, and abrasive wear.

All of which means less time out for repairs and replacements, more efficient, more profitable operation all the way through. In addition, TIGER BRAND Excellay Preformed Wire Rope is easy to handle . . . can be rigged quickly . . . requires shorter breaking-in period. Is it any wonder that with construction men everywhere, *the BIG Demand is for* TIGER BRAND!

IMMEDIATE DELIVERY

in any quantity now available on most types and sizes. Write, wire or call your nearest supplier. Anticipate your needs and stock up now. Keep an extra reel on hand. Don't get caught with your lines down!

Excellay Preformed

USS
AMERICAN
TIGER BRAND
WIRE ROPE
UNITED STATES STEEL

AMERICAN STEEL & WIRE COMPANY
Cleveland, Chicago and New York
COLUMBIA STEEL COMPANY
San Francisco
Tennessee Coal, Iron & Railroad Company, Birmingham,
Southern Distributors
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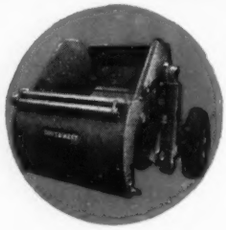
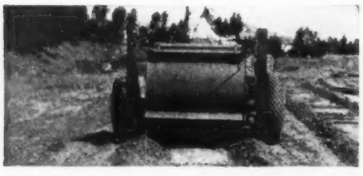
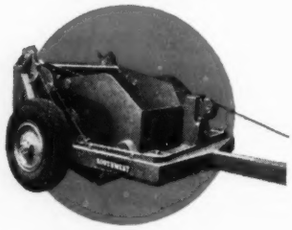
UNITED STATES STEEL

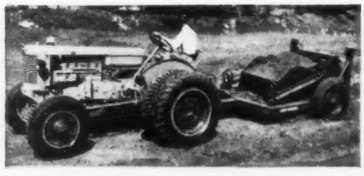
The BIG Demand is for Tiger Brand

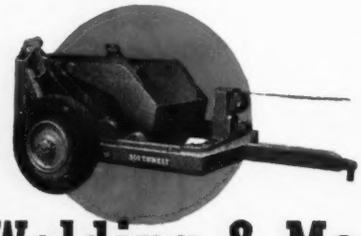
NOW - SOUTHWEST BUILDS *Both Hydraulic* AND *Cable* CONTROLLED HAULING SCOOPS











THESE TWO TYPES of hauling scoops, "BUILT BY SOUTHWEST," provide complete maneuverability and control on every job. Both types assure easy loading and positive ejection of all materials. Pivots behind the wheels make over-bank dumping and other fill work a simple operation. The load can be discharged while moving forward, backward or standing still. A CONTROLLED SPREADING feature permits spreading to job specifications.

CONSTRUCTION MACHINERY DIVISION

Southwest Welding & Manufacturing Co.

ALHAMBRA CALIFORNIA

SPREADER AND VIBRATOR
ONE OPERATOR

FINISHING MACHINE
ONE OPERATOR

MAXIMUM PERFORMANCE with MINIMUM CREWS

BULK CEMENT PLANT
ONE OPERATOR

For road and airport paving and for general concrete construction, Blaw-Knox builds machines and equipment requiring only minimum crews to complete a quality construction project in the quickest possible time. *Low cost per yard* tells the story of the contractor's profit.

Look to Blaw-Knox for detailed information and performance data on the time and money saving equipment shown here — and also ask for data on Blaw-Knox Road Forms; Curb and Gutter Forms; Sheepsfoot Rollers; Truck Mixers and Agitators; Truck Turntables; and Steel Forms for General Concrete Construction.

You should have a copy of Bulletin No. 2036. *Send for it.*

BLAW-KNOX DIVISION of Blaw-Knox Company
2086 Farmers Bank Building, Pittsburgh 22, Pa.

See your Nearest Blaw-Knox Distributor.

PORTABLE AGGREGATE BATCHING PLANT
ONE OPERATOR

CONCRETE BUCKETS
ONE OPERATOR

CLAMSHELL BUCKETS
ONE CRANE OPERATOR

PRECISION SUBGRADER
ONE OPERATOR

BLAW-KNOX CONSTRUCTION EQUIPMENT

One reliable source for all your ROAD-STEEL needs

Bethlehem Bar Mats ready for placement in new highway being built near Fulton, N. Y. Completely shop-fabricated, with strong clips that hold the bars rigidly in place, Bethlehem Bar Mats are easy to handle and install. They come in sizes and weights to meet the specifications of state highway departments.

Bethlehem Safety-Beam Guard Rail, shown here along a bridge approach in Kentucky, provides a sturdy continuous beam which holds runaway vehicles in check, redirects them parallel to the rail. Rolled of heavy steel plate, it can be installed on any type of post. Safety-Beam Guard Rail is easily visible day or night, and is especially suited for bridges, bridge approaches, along high embankments, and at other hazardous locations.

Are you planning a highway job that's going to call for drill steel? Wire rope? Bar mats? Guard rail? No matter how many different kinds of highway steel may be needed, put your requirements squarely up to Bethlehem.

When you deal with Bethlehem, you get from one source everything—that's right, everything!—in the steel line that you could possibly need in building a highway or highway-bridge. And Bethlehem service saves you time, too, for your complete order is handled as a unit, with individual items scheduled for delivery as you need them.

You'll like Bethlehem's steel service to contractors. Call us on your next highway job.

LEADING BETHLEHEM HIGHWAY PRODUCTS

Road Joints • Reinforcing Bars • Bar Mats • Guard Rail Guard Rail Posts • Wire Rope • Hollow Drill Steel • Fabricated Structural Steel • Sheet and H-Piling • Spikes • Bolts and Nuts • Tie-Rods • Timber Bridge Hardware

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation

BETHLEHEM STEEL

STEEL for HIGHWAYS

It's easy to make money...

with a PITMASTER

Cedarapids

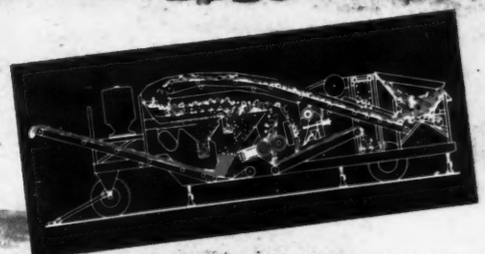
Built by IOWA

Exceptionally low first cost combined with low maintenance and operating costs together with hourly production of more than 35 tons of minus 3/4" material with 25% crushing mean profitable aggregate production in anybody's language.

10" x 16" roller bearing jaw crusher and 16" x 16" roller bearing roll crusher give you plenty of crushing output. Horizontal, double deck vibrating screen assures greater capacity, closer grading, and higher efficiency. Available with chip screen, hopper and feeder or swivel feed conveyor. Fast, easy set-up and take-down minimize lost time between jobs. When buying a crushing plant — buy the best — buy Cedarapids. If your requirements are moderate — buy a Pitmaster.

IOWA MANUFACTURING CO.
Cedar Rapids, Iowa
U. S. A.

PRODUCT OF IOWA



The Iowa Line

of Material Handling Equipment Includes: ROCK AND GRAVEL CRUSHERS • BELT CONVEYORS • STEEL BINS • BUCKET ELEVATORS VIBRATOR AND REVOLVING SCREENS • STRAIGHT LINE ROCK AND GRAVEL PLANTS • FEEDERS • TRAPS • PORTABLE POWER CONVEYORS • PORTABLE STONE PLANTS • PORTABLE GRAVEL PLANTS • REDUCTION CRUSHERS • BATCH TYPE ASPHALT PLANTS DRAG SCRAPER TANKS • WASHING PLANTS • TRACTOR-CRUSHER PLANTS • STEEL TRUCKS & TRAILERS • KUBIT IMPACT BREAKERS

1 *Original ARMCO Multi Plate installation—13¼ feet in diameter and 75 feet long.*

2 *This is what happened when a sudden flood washed out the road. The ARMCO Multi Plate structure was intact but was replaced by a bridge with greater flood capacity.*

3 *Making little bridges out of a big bridge was easy with ARMCO Multi Plate. Sections from the original structure were used in building this one. The same mitering was used at the ends without recutting. Two other arches, 7 feet in span and 40 feet long, were also constructed and enough plates were left for still another small bridge when needed.*

Multi Plate can be salvaged 100%

There's a song in every budget when you can offset disaster as easily as this experience shows.

When an unprecedented flood washed out a Multi Plate bridge it was replaced by a larger structure. Yet material loss was zero since the sturdy Multi Plate sections were salvaged and used to build several smaller bridges at other locations.

"Packaged" Multi Plate structures are "budget-savers" from start to finish. The easily-handled, pre-curved, corrugated plates are nested together to save space in shipping, hauling and storing. Construction is done with unskilled labor, the simplest equipment and small tools. No curing, no waste, no delay. The road is quickly opened to traffic—often without detours.

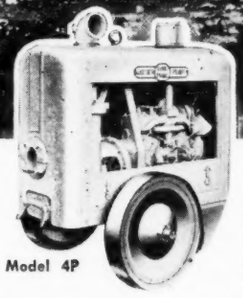
For a durable, economical job include ARMCO Multi Plate in your plans for bridges, stream enclosures, large sewers and special drainage structures. Then you'll never have to worry about being left "high and dry" should conditions change. Write today for complete data. Armco Drainage & Metal Products, Inc., 1385 Curtis Street, Middletown, Ohio

MULTI ARMCO PLATE

ARMCO Multi Plate

it takes a JAEGER "SURE PRIME"
to pump 100 ft. up and over 1000 ft. away

TOP QUALITY AT BEDROCK PRICES: Tripled factory output and latest high speed production tools are keeping Jaeger prices far below cost levels of materials and labor.

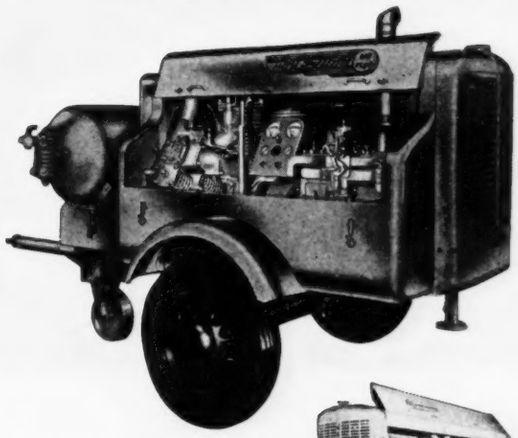


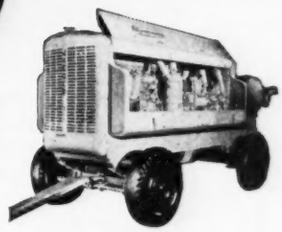
Model 4P

After 2 other well-known pumps tried it and failed, a standard Jaeger 4" Pump successfully handled this tough pumping job at Westlake Quarry, St. Louis, Mo. Remember this when you buy pumps: *Jaeger "Sure Primes" are built and powered far beyond ordinary standards and kept efficient by weather-proof enclosures which no other pumps provide.* Sizes 1½" to 10".

YOU LOSE MONEY RENTING WORN-OUT OLD COMPRESSORS

BUY or RENT an efficient NEW JAEGER "AIR PLUS" for your next job





Any size machine you need —FOR RENT BY HOUR, DAY, WEEK OR MONTH — a money-saving deal for you!

HERE'S OUR PROPOSITION:

Cut your gas and oil expense as much as 25%.

Put more air behind your tools — a steady, heavy wallop, no waiting for air — get more work done for wages paid.

Get cool, clean, dry air — Jaeger's 100% efficient intercooling, automatic drainage, tight rings and carbon-free valves protect your tools from heat, oil fouling and corrosive moisture.

Insure your job against compressor breakdowns.

It costs no more to rent a sweet-running new Jaeger than an old fuel-burner. We also have the Tools, Hose, Bits, etc. you may need.

Call your nearest Jaeger "Air Station"

THE JAEGER MACHINE COMPANY

800 Dublin Avenue, Columbus 16, Ohio — Distributors in 120 Cities

REGIONAL OFFICES:	8 E. 48th St. NEW YORK 17, N. Y.	226 N. LaSalle St. CHICAGO 1, ILL.	235-38 Martin Bldg. BIRMINGHAM 1, ALA.

So Easy! with "PRECISION" AIR CONTROL

LIMA

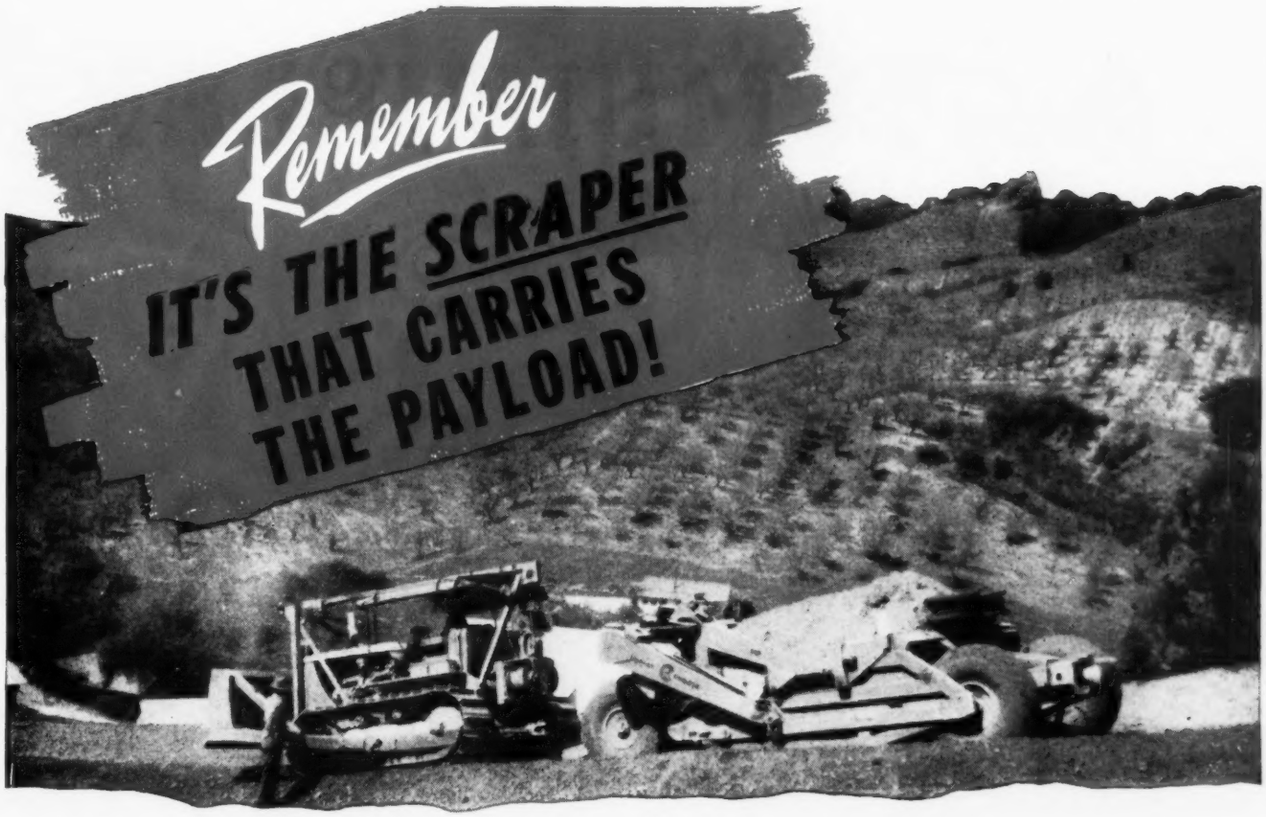
THE LIMA DIAMOND FOR OVER 75 YEARS AN EMBLEM OF QUALITY WORKMANSHIP

No longer is it necessary to shove and tug at heavy control levers; no longer is output penalized due to operator fatigue. LIMA "Precision" air control has taken the effort out of operating by replacing the conventional hard-to-throw levers with positive, smooth operating air control valves—valves that require only a mere touch to put the machine through its paces. LIMA "Precision" air control clutches are free from constant adjustment. The next time you get a heavy-duty shovel, crane or dragline be sure to get a LIMA with "Precision" air control. LIMA paves the way to greater output with less operator fatigue.

LIMA LOCOMOTIVE WORKS, INCORPORATED
Shovel and Crane Division **LIMA, OHIO, U. S. A.**
OFFICES IN PRINCIPAL CITIES

LIMA

Capacities . . . SHOVELS ¾ YARD TO 5½ YARDS • CRANES 13 TONS TO 100 TONS • DRAGLINES VARIABLE



. . . AND COMPETITIVE TESTS PROVE THAT LaPLANT-CHOATE SCRAPERS DO THE BEST JOB UNDER THE MOST CONDITIONS!

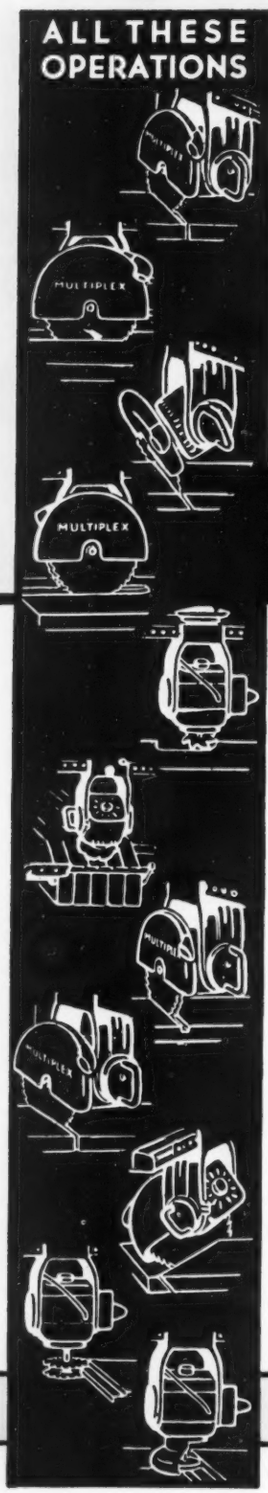
In the final analysis, *any make* of crawler tractor with sufficient horse-power will do a reasonably good job of handling a scraper. But when it comes to selecting *the right scraper,* it's an entirely different story. Some scraper outfits get heaping loads in double-quick time. Others take much longer — even with the aid of a pusher. Some will dump or carry a smooth spread in high gear, while others are slow and uncertain—especially in wet or bulky materials. Some scrapers make efficient use of tractor power — others burn it up by lugging around "an extra yard of dead-weight" that is strictly an extra cost item. The point is—regardless of what tractor you use, there's *a whale of a difference in scraper performance.* And that difference in the scraper alone can have an important bearing on your stripping or material handling costs. That's why more and more smart operators are picking up whatever tractors they can get—and standing pat on LaPlant-Choate Positive Forced Ejection Scrapers. Why LPC? Because competitive tests prove that under the varying conditions of scraper operation, La-Plant-Choate's improved rigs consistently deliver *highest average production at lowest over-all cost.* Just ask any recent LaPlant-Choate owner. LaPlant-Choate Manufacturing Co. Inc., Cedar Rapids, Iowa; 1022 77th Ave., Oakland, Calif.

LaPLANT-CHOATE

Positive FORCED EJECTION SCRAPERS

FIRST in value because they're **FIRST** in performance

Only a MULTIPLEX *will do this!*



The MULTIPLEX is the most versatile saw made due primarily to the EXCLUSIVE VERSATILE ELBOW, or center pivoted track, allowing unlimited saw positions.

DIFFICULT LEFT-HAND MITERS are cut with ease in the same 100% range as the conventional right hand miters. For different miters just move the track backward or forward as necessary. Difficult cuts are made with the *saw blade practically in the center of the table* -- an exclusive Multiplex feature not found in any other radial arm saw.

The movable table provides for greater capacity cuts and permits full usable travel of the cutting head in any cross cut miter or rip position.

The Multiplex Model 50A Radial Arm Saw is especially designed to handle heavy work in greater capacities and to do it faster, more accurately and with greater safety and ease of operation. A sturdy and powerful piece of equipment.

Write today for literature or name of nearest dealer.

RED STAR PRODUCTS, INC.

3455 VEGA AVENUE, CLEVELAND 13, OHIO U. S. A.

CROSS CUT - RIP - BEVEL CUT OFF - PLOW - SHAPE - DADO
RAFTER NOTCH - MITER - COMPOUND MITER - TENON - RABBET

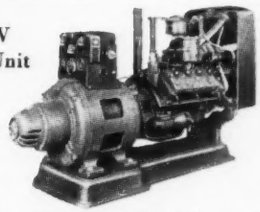
KRW INDUSTRIAL POWER PLANTS

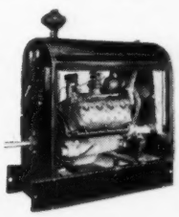
CUT COSTS 40-50%... THIS NEW BOOK GIVES ALL FACTS ABOUT THESE FAMOUS LOW COST FORD-POWERED, EASILY SERVICED UNITS... THOUSANDS IN DAILY USE

Write for it today!

CUT POWER OR PUMPING COSTS IN HALF WITH
KRW INDUSTRIAL POWER UNITS
DEPENDABLE ECONOMICAL FORD POWER
KRW UNITS operate on GASOLINE, NATURAL GAS, BOTTLED GAS
OPERATING COSTS PER HOUR
THE 100-H.P. FORD V-8

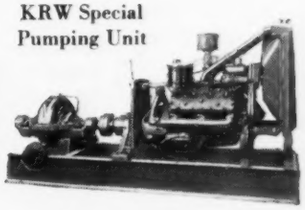
KRW 20KV Generating Unit





KRW Industrial Power Unit (enclosed type)

KRW Special Pumping Unit



● **Powered by the famous Ford V-8—100 H. P. Truck Engine, KRW Industrial Power Units operate on Gasoline (tax free), Natural Gas or Butane. Their maintenance and repair cost is held at a minimum because of around-the-corner and world-wide, low-cost Ford service and the Ford Engine and Parts Exchange Plan. Mail the coupon for this informative book today.**

K. R. WILSON
BUFFALO 3, NEW YORK

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K. R. WILSON, 215 Main St., Buffalo 3, N. Y.

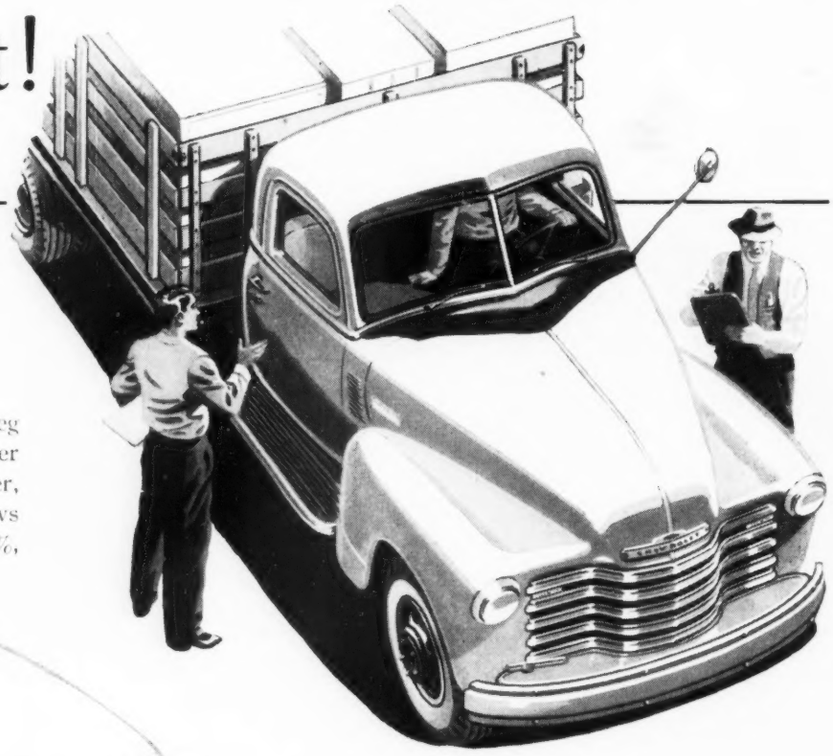
Please send me a copy of the new KRW Industrial Power Unit Book.

Name .....

Address .....

City and Zone ..... *State* .....

Never before has there been a *new* line of trucks with so many features to talk about!

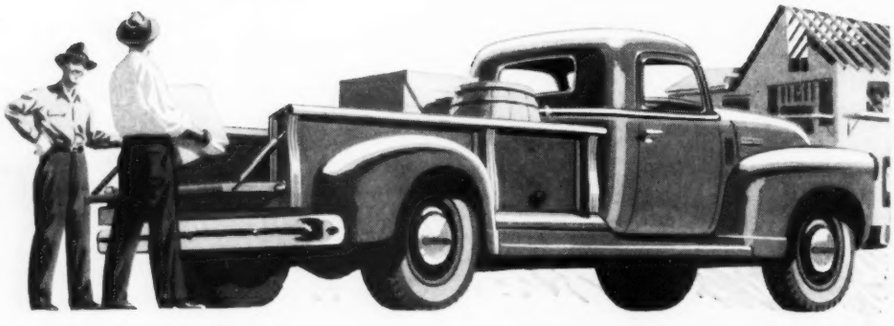


NEW FOUR-POINT DRIVER COMFORT. 1. The new cab that "breathes"—a stream of fresh air is *drawn in* from the outside—heated in cold weather—and used air is *forced out.** 2. Driver's compartment is wider and deeper—more leg room. 3. New, fully adjustable, bigger and more comfortable seats. 4. Wider, deeper windshield and larger windows increase visibility from the cab by 22%, for safer, easier operation.

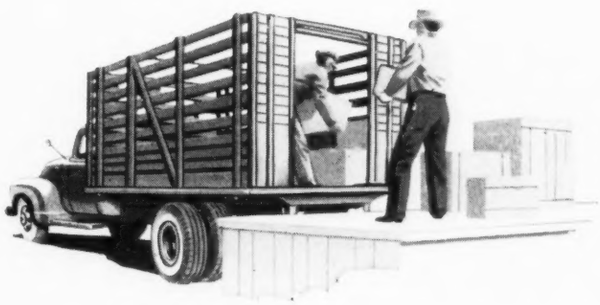
**Fresh-air heating and ventilating system optional at extra cost.*

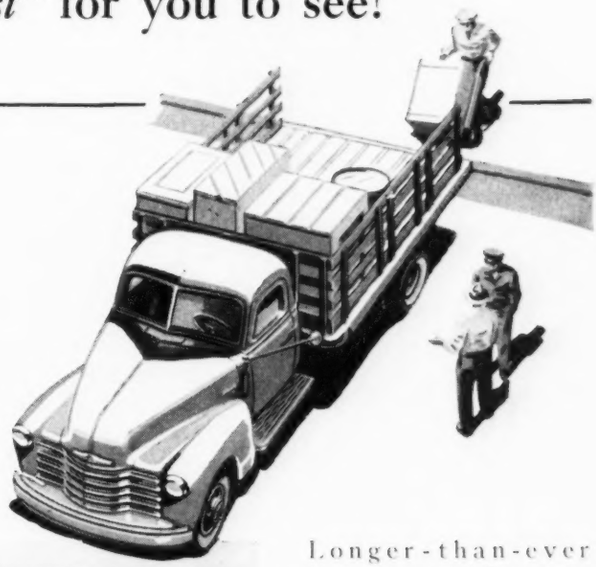
Chevrolet's revolutionary **FLEXI-MOUNTED CAB** is rubber-cushioned against road shocks, torsion and vibration; designed for longer cab life—one of many unique features in today's newest **ADVANCE-DESIGN** trucks. They're new from roof to road, from headlight to tail light, with performance that will give you better and more profitable results on any delivery or hauling job.

World's most economical for their size, Chevrolet's **VALVE-IN-HEAD TRUCK ENGINES** give extra power for extra profits. . . . You'll find **INCREASED LOAD SPACE** in panels and pick-ups to carry the larger loads and shorten the longer jobs—plus more efficient loading in stake and high rack bodies!



Drivers will find new comfort and new safety in the cab that *"breathes"*—*"inhales"* fresh air and *"exhales"* used air—that keeps glass clear and free from fogging . . . plus a host of other new features that make these trucks a *"must"* for you to see!





Chevrolet's stronger, sturdier **FRAMES** with new super-cargo capacity are designed to carry *greater* loads *greater* distances for a *longer* time. . . . Chevrolet's famous **FULL-FLOATING HYPOID REAR AXLES** are geared for your load on any road.

SEE YOUR CHEVROLET DEALER

He can supply Chevrolet trucks, standard or with special equipment, to meet your hauling needs.

Longer-than-ever **WHEELBASES** for more room in the cab . . . better load distribution!

Chevrolet's **HYDRAULIC TRUCK BRAKES** are quick, safe and dependable! Here is exclusive special linkage, designed to produce brakes at their best!

NEW ADVANCE-DESIGN

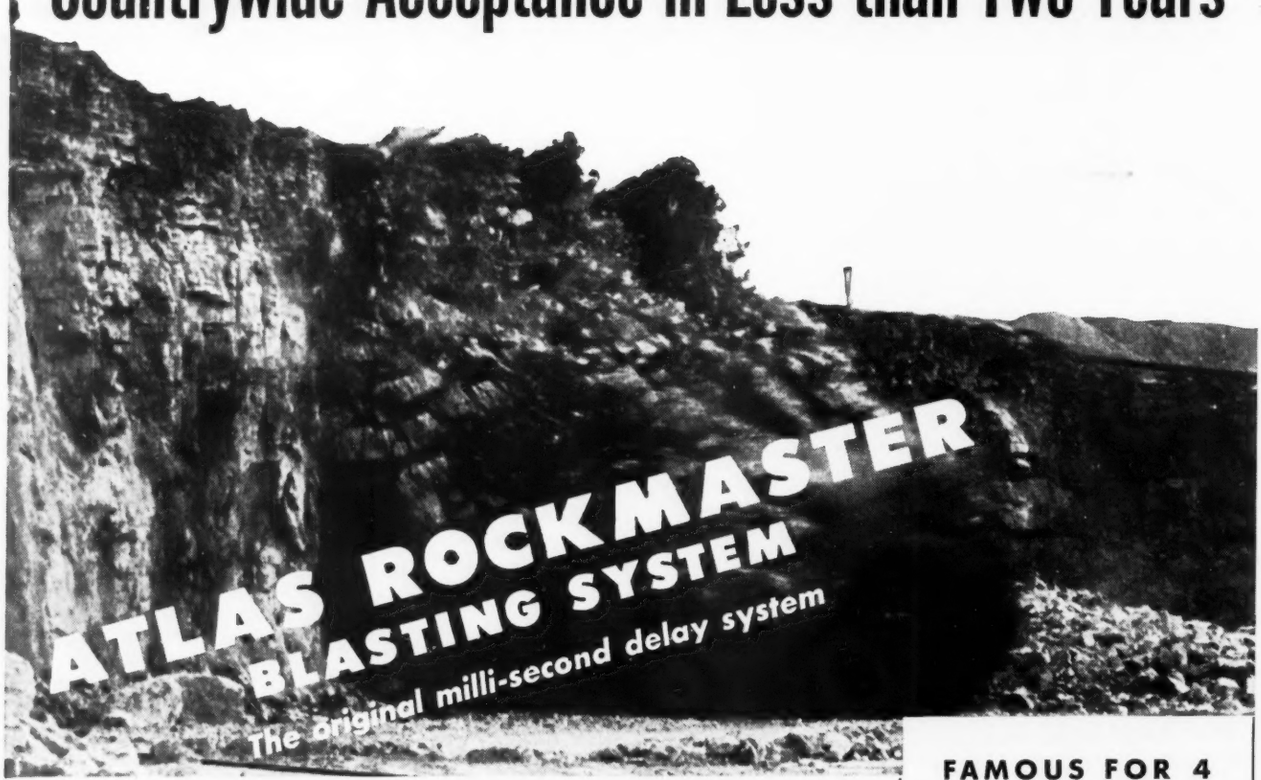
CHEVROLET TRUCKS

FOR TRANSPORTATION UNLIMITED

CHEVROLET MOTOR DIVISION, *General Motors Corporation*, DETROIT 2, MICHIGAN

PICK-UPS PANELS STAKES CAB-OVER-ENGINE TRACTOR-TRUCKS & CHASSIS FOR SPECIAL EQUIPMENT

Countrywide Acceptance in Less than Two Years



Want to get better fragmentation of your rock? Increase production as much as 30%? Reduce "back break"? Cut down complaints about noise and vibration, even though you fire more holes? Put Atlas Rockmaster to work!

All over the country blasters are getting results like these with the Atlas Rockmaster Blasting System—in quarries, strip pits, on construction work, even underground in many cases! Wherever this sensational development has proved applicable, *greater efficiency* has always followed—sometimes in one way, frequently in all four.

Pioneered and originated by Atlas, Rockmaster is a whole new system of blasting that controls the delay elements of a shot within thousandths of a second—split-timing such as has never before been possible. The system was introduced in 1945. More than 2,000,000 special Rockmaster electric blasting devices were sold in 1946 alone! And two years of experience with split-second delay blasting have given Atlas blasting technicians a background of know-how that cannot be gained in any other way.

Today there are many imitations of this amazing blasting system, but only one *original* Rockmaster that has proved itself with spectacular results—the kind of results *you* want. Call in the Atlas representative and talk over your problem. He'll be glad to show you how Rockmaster can help.

FAMOUS FOR 4 OUTSTANDING RESULTS

1. **MORE ROCK READY FOR SHOVEL**
2. **BETTER FRAGMENTATION**—Less secondary blasting. Shovel efficiency increased as much as 30%
3. **FAR LESS "BACK BREAK"** behind your shots
4. **MINIMUM NOISE AND VIBRATION,** even though more holes are fired.

Less Bark . . . More Bite

"ROCKMASTER"—Trade Mark

ATLAS EXPLOSIVES
"Everything for Blasting"

CHEMICALS ATLAS EXPLOSIVES

ATLAS POWDER COMPANY, Wilmington 99, Del. • *Offices in principal cities* • *Cable Address—Atpowco*

YOU CAN POUR
A FOUNDATION IN 8 HOURS
using ATLAS SPEED FORMS
(PATENTS PENDING)

— and at a cost of only *2-3/4c per sq. ft. contact surface!

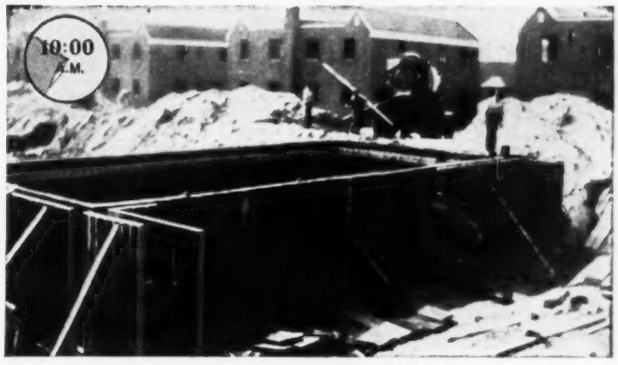
Here's how you, like builder Louis Belli, can do it using only 1 set of these labor-saving adjustable steel forms; (1) Strip forms from foundation poured previous day. (2) Move and erect forms for next foundation on prepared footings. (3) Pour concrete as form work progresses. (4) Complete in any 8-hour day employing ordinary building workers! (See actual job photos below).

Complete Foundation with NYC Labor Cost Only $11.10 per Cu. Yd.

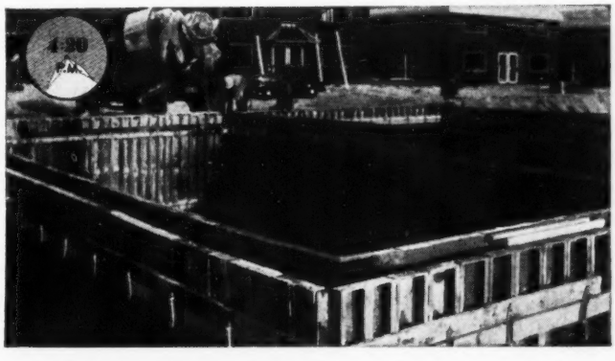
For Duplex House (42' x 44' x 7') using the ATLAS SPEED FORMS
Unit costs are for job in New York-Metropolitan area.
Total Atlas Speed Forms required, 3,024 sq. ft.

Labor (erecting and stripping forms and placing concrete—78½ hrs. @ $1.46)	$114.61
Ready mix concrete—61 cu. yd. @ $8.25	503.25
Form rental—3,024 sq. ft. @ .0875c per use	26.46
Snap ties—260 @ 6½c	16.90
Truck hire moving forms	10.00
Oil	2.00
Walers and tie wedges	4.00
Total	$677.22
Total cost per cu. yd.—61 cu. yds.—$677.22	$11.10 per cu. yd.
Labor cost erecting and stripping forms only	83.60
3,024 sq. ft. (forms)—$83.60—Labor	.02¾c sq. ft.

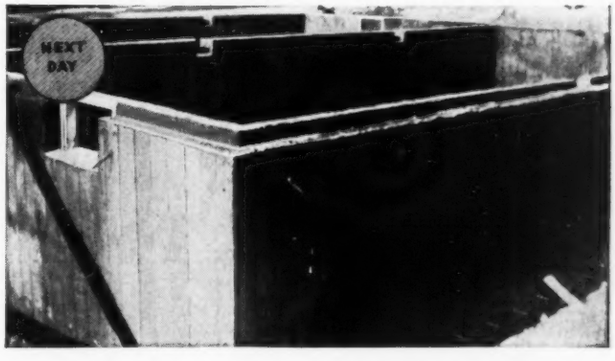
7:10 A.M. Workmen strip previously prepared footing forms ready to receive foundation forms which are now arriving from foundation poured previous day.



10:00 A.M. Atlas speed forms go up fast. Diagonal braces hold outer forms in position (front) as men quickly erect center partition wall of duplex foundation. Mixer truck (top, center) already approaches to pour first load of concrete.



4:20 P.M. Foundation pouring completed. Walers are attached to both outside and inside forms, tied through with standard wall ties. End connection, furnished (front, corner), is made using ⅜" wedge bolts and clips. Mixer truck (upper left) pours the 10th and last load of concrete.



Next Day: Forms are removed to go at once on the next foundation to be poured, repeating steps shown in photos above. Smooth concrete fundation is ready for erection crew.

IRVINGTON FORM & TANK CORPORATION, Irvington 43, New York

Write Dept. MC — NEW YORK SALES OFFICE — 43 CEDAR STREET — Telephone BOwling Green 9-4030

ATLAS LABOR-SAVING *SPEED* FORMS

says Combs Construction Company, Chattanooga, *about* MICHIGAN

This MICHIGAN owner, in a letter to Nixon Machinery & Supply Co., Chattanooga, goes on to say

". . . we have never gone wrong buying equipment that you recommend. Your claims were, if anything, conservative.

"We have used our MICHIGAN as shovel, back hoe, clam, dragline and in steel erection as a crane. In all operations it has proven a very efficient and economical machine. Operating and maintenance costs have been extremely low. Its mobility and flexibility, plus its other features has convinced us that it is an essential part of our equipment fleet.

"We recommend the MICHIGAN Model T-6-K, without reservations, for any work within its capacity."

Full details about the complete line of 3/8 yd. and 1/2 yd. convertible MICHIGAN Mobile SHOVEL-CRANES are available on request.

MICHIGAN
POWER SHOVEL COMPANY
BENTON HARBOR MICHIGAN

Daylight STRETCHER

Engineered Floodlighting Permits 3-Shift Operation...Reduces Accidents

G-E Type L-68 floodlight for illuminating large outdoor installations

Among the first tools moved into a new construction area are floodlights, because contractors know that this is the only way to *stretch* precious daylight hours and reduce night accidents and vandalism. But contractors also know that there is more than one way to floodlight a job, just as there is more than one type of floodlight.

Buy Floodlighting . . . Not Lights

General Electric's Illuminating Laboratory runs continuous studies on outdoor lighting so that you may have the best possible floodlighting for each type of installation. The Type L-68 floodlight shown above, is just one of the new, improved lights which result from these studies. It is an efficient, sturdy floodlight, developed specially for the conditions encountered in large construction projects; its tough front glass keeps the reflector clean. It can be platform-mounted and easily skidded from place to place as the job progresses.

When you next have occasion to order floodlights, remember to buy *lighting*, not just *lights*. Let General Electric show you how to get the best engineered illumination through correct location of the correct floodlights. Contact your G-E representative or local G-E office. *Apparatus Department, General Electric Co., Schenectady 5, N. Y.*

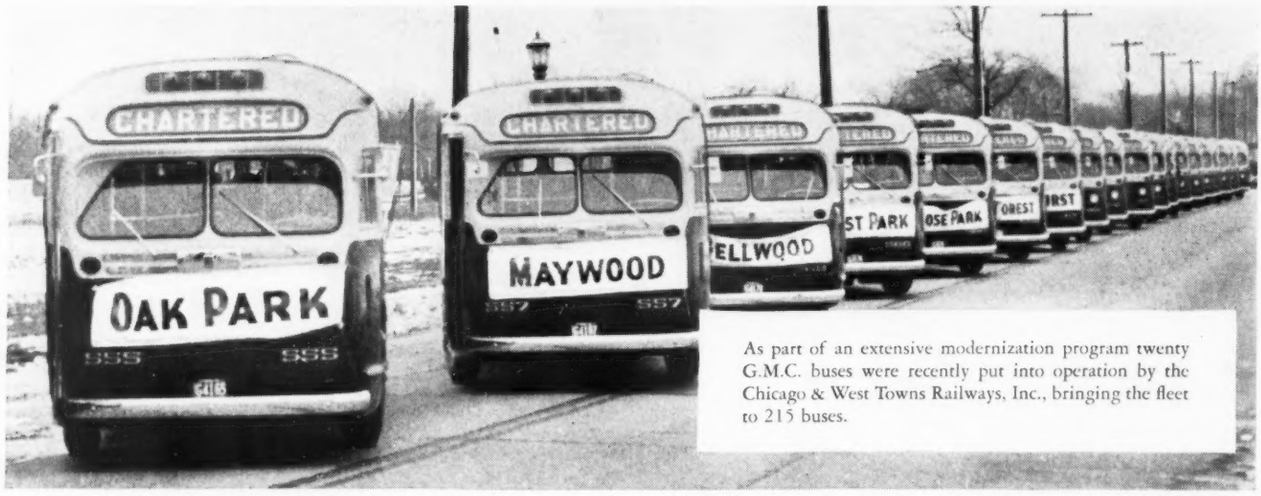
Floodlighting was instrumental in the record-breaking construction of Fontana Dam (above), and also aided in the race against time at Anderson Ranch (below).

GENERAL ELECTRIC

656-60

ELECTRIFIED CONSTRUCTION

BETTER PRODUCT ★ LOWER COST



As part of an extensive modernization program twenty G.M.C. buses were recently put into operation by the Chicago & West Towns Railways, Inc., bringing the fleet to 215 buses.

Low maintenance and reliable operation...

keep Chicago & West Towns Railways sold on . . .

Stanolube HD

Mr. Bert Collett, President of the Chicago & West Towns Railways, Inc.—which operated over seven million vehicle miles last year—has had ample opportunity to judge the cost-reducing quality of Stanolube HD.

Long mileage records between overhauls as secured by Mr. Collett are reported by practically all users of Stanolube HD. This heavy-duty, heat-resistant oil is fortified against oil oxidation and the formation of deposits. A Standard Oil Automotive Engineer can give you all the facts and help you make a test. Write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois, for the Engineer nearest you.

Attending the ceremony inaugurating the addition to the fleet were: (from left to right – front row) J. L. Phelps, Standard Oil Automotive Engineer and D. E. Sterling, Asst. Superintendent of Equipment of the C. & W. T. Rys. (Rear row) B. J. Toale, Standard Oil Automotive Engineer; Leslie E. Salter of the Illinois Commerce Commission; H. C. Soenksen, Standard Oil Salesman; P. W. Gerhardt, Asst. to President of C. & W. T. Rys.; L. P. Reilly, Superintendent of Equipment; Mr. Collett, President of C. & W. T. Rys.; B. L. Goldberg, Counsel for C. & W. T. Rys. and J. W. Van Cleave, Standard Oil Automotive Engineer. Mr. Reilly, with the assistance of Mr. Sterling, is to a great extent responsible for the excellent maintenance record of this fleet.

CHICAGO & WEST TOWNS RAILWAYS, INC.
GENERAL OFFICES
LAKE STREET AND CUYLER AVENUE
OAK PARK, ILLINOIS

Standard Oil Company
Chicago, Illinois

April 29, 1947

Gentlemen:

Since the first buses were put into operation on our suburban service we have recognized the vital importance of good fuels and lubricants. They not only contribute to low maintenance, but they insure reliable operation which is our first consideration.

We have found Standard Oil's fleet products completely satisfactory, particularly Stanolube HD motor oil which we have used for the past seven years.

With this oil many of our engines have operated 200,000 miles without a major overhaul. With the exception of the oldest buses in the fleet, the average mileage between valve grinding and reringing is well over 100,000 miles. We attribute this highly satisfactory performance to good maintenance practice and Stanolube HD -- the best oil we have used during our twelve years of bus operation.

Bert Collett
PRESIDENT

STANDARD OIL COMPANY (INDIANA) STANDARD SERVICE

"Whenever we have a wet job, we think of Moretrench"

—writes one of our customers.

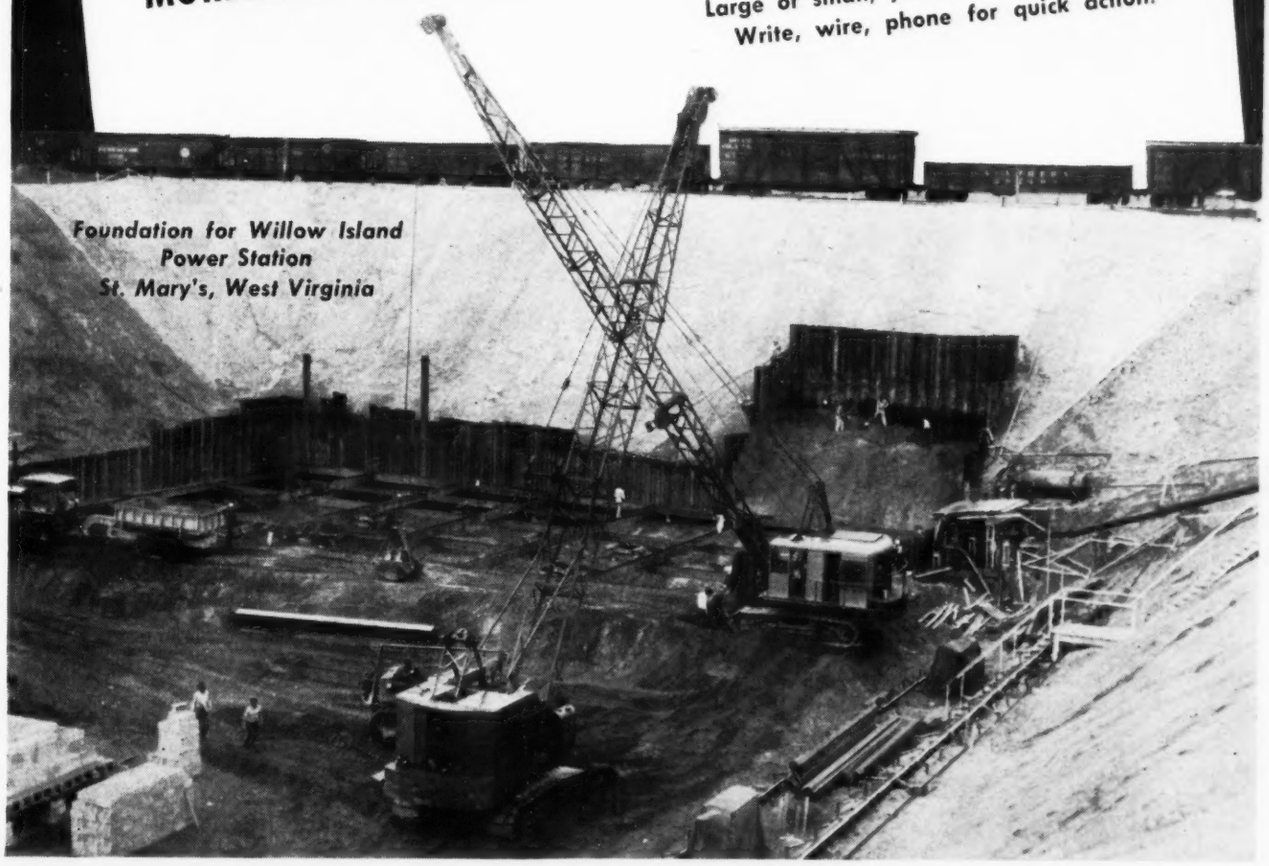
Lots of other people have the same idea. In the first six months of 1947, nearly one hundred construction jobs of various types have been dug "in the dry" with Moretrench Wellpoint Equipment. To identify a few:

Sewerage Pump Station—Miami Beach, Fla.
Sewers—Houston, Texas
Power Plant Foundations—Montville, Conn.
Pipeline River Crossing—Cleveland, Okla.
Water Treatment Plant—Gainesville, Fla.
Caisson—C & P Telephone Co.—Charleston, W. Va.
Foundation for Lever Bros. Plant—Hammond, Ind.
Lift Station—Norton, Kansas
Toe Trenches for Sardis Dam—Sardis, Miss.

The Reason?

MORETRENCH RESULTS ARE DRY—IMMEDIATE—ECONOMICAL!

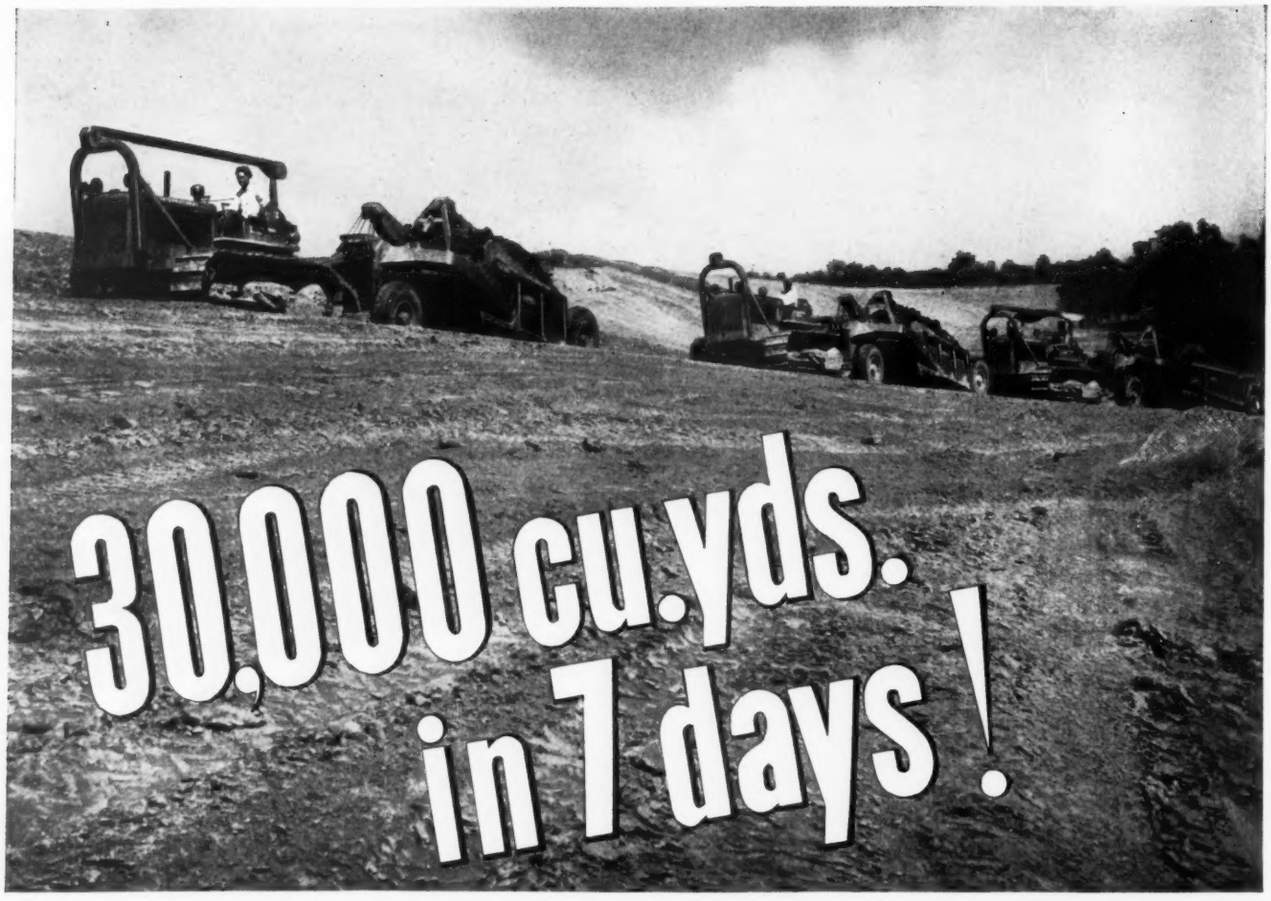
Large or small, your wet job interests us.
Write, wire, phone for quick action.



Foundation for Willow Island Power Station St. Mary's, West Virginia

MORETRENCH CORPORATION

90 West St. New York 6 | 3037 S. Christiana Ave. Chicago 23, Illinois | 2424 Chicago Ave. Tampa 6, Florida | 315 W. 25th St. Houston 8, Texas | Rockaway New Jersey



...the fast, bonus loading—the fast, clean dumping —the dependability of 3 HEIL Cable Scrapers save time and money on Mississippi River levee job!

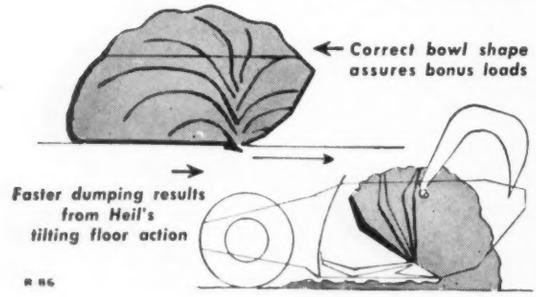
Heil Cable Scrapers have a reputation for moving more dirt, faster and at lower cost. They earned this reputation the hard way, on just such jobs as this Mississippi River levee. Only three Heil Cable Scrapers were required — two eight- and one ten-cu. yd. units — to move 30,000 yds. of heavy gumbo in one week's time. This is earth-moving at its best — made possible by the following Heil features:

Greater digging ability — Heil Cable Scrapers load in a shorter distance because they dig harder. The draft pivot point is located in such a way that the weight of the scraper is placed on the cutting bit for better penetration.

Bonus loads, no voids or waste — the shape of the bowl and front gate of Heil Cable Scrapers conforms to the boiling action of the dirt as it is dug. There are no empty pockets to fill, so the scraper loads to capacity quickly — no material is thrown over the back of the bowl; no wasted effort or lost time.

Faster, cleaner dumping — the high-opening front apron permits a third of the load to roll out by gravity. The remainder is ejected by means of a tilting floor. Both the sides and rear of the bowl are scraped clean during this tilting operation. The efficient Heil dumping action requires little line pull — loads can be dumped at hauling speeds — no time is lost in shifting gears.

Prepare for the busy days and the tough competition ahead. Use time- and money-saving Heil Cable Scrapers to do your earthmoving — they are available in all the standard sizes. See your International Industrial Power distributor for all the facts. Write for latest bulletins.



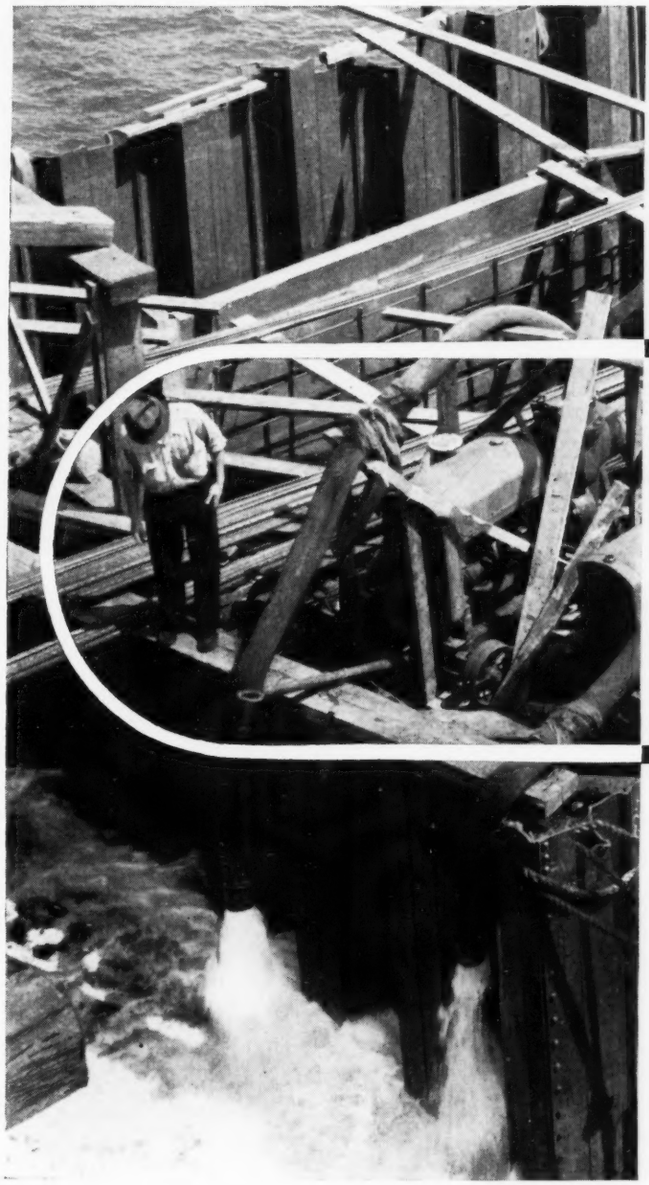
THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

Contractors pumps can't be

"CHOOSY"

They have to pump more than water -- muck, weeds, sand, gravel and other solids. Gorman-Rupp self-priming centrifugals handle anything that comes their way for days, weeks, months at a time, if you want them to. And, they'll stand up. There's not a quitter among them! There's a big reason for this. The insides of a Gorman-Rupp are by far the simplest ever made -- no small openings. No by-pass tubes, no sharp corners, no tricky valves. There's no place for refuse to stick or lodge. All internal passages are genuinely streamlined. Trouble is saved. Capacity stays up. Efficiency goes up. Repairs stay down. Thirty to sixty days without a stop and without harm to the mechanism is common with Gorman-Rupp Pumps. You can handle more water per hour, size for size of pump; more and bigger solids; with less trouble and up-keep; and with less fuel, when you do your pumping jobs with a self-priming Gorman-Rupp. We will place one in your hands and let you be the judge.



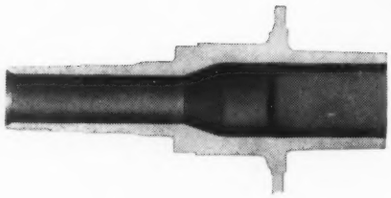
CAPACITY IN GALS. PER HOUR
with Pump 15 ft. above water

	TOTAL HEAD (incl. friction)			
MODEL	30 ft.	40 ft.	50 ft.	60 ft.
10-M	9000	7800	6600	4500
20-M	16500	15000	12600	9600
40-M	34500	33900	32700	30600
90-M	76800	73800	69600	63000
125-M	109200	104400	97200	90000

Write for detailed information or contact your nearest distributor.

THE GORMAN-RUPP COMPANY
308 N. BOWMAN STREET • MANSFIELD, OHIO

The new medium and light-heavy-duty Timken "3 for 1" Series axle housing is forged of high-carbon steel. Note flange for pilot fit of carrier in housing and machined supports for lugs of carrier.



Cross-section through upset-forged spindle and integral brake mounting flange. The forged spindle is electrically butt-welded to the housing.

The new Timken "Full-Corner" rectangular section at the spring seat offers increased strength and rigidity without increased weight.

TIMKEN 3 for 1 AXLES

THE FINAL ANSWER TO FINAL DRIVE PROBLEMS

Another reason why!

STRONGER HOUSING

Shown above is a new Timken "3 for 1" Axle housing.

For each size axle, this new Timken-designed housing is the strongest ever produced . . . yet it is no heavier than conventional housings.

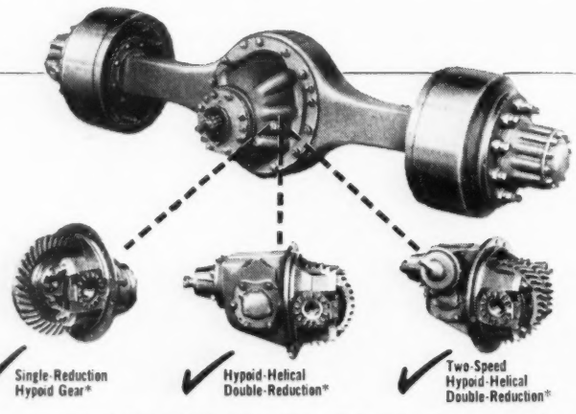
It is forged of high-carbon steel with Timken "Full-Corner" rectangular section at the spring seat for greatest strength and rigidity with minimum weight.

The spindle with integral brake mounting flange is upset-forged and butt-welded to the axle housing.

The heavy steel cover is welded in place at the rear, reinforcing the housing and further increasing its rigidity.

Increased housing strength and rigidity pay off in *better axle performance and improved economy and durability* because they help to maintain exact alignment of parts and prevent "play" which would cause excessive wear.

Look *under* the next new trucks you buy. Specify Timken "3 for 1" Axles!



✓ Single-Reduction Hypoid Gear*

✓ Hypoid-Helical Double-Reduction*

✓ Two-Speed Hypoid-Helical Double-Reduction*

*INTERCHANGEABLE IN SAME AXLE HOUSING USING THE SAME AXLE SHAFTS

TIMKEN

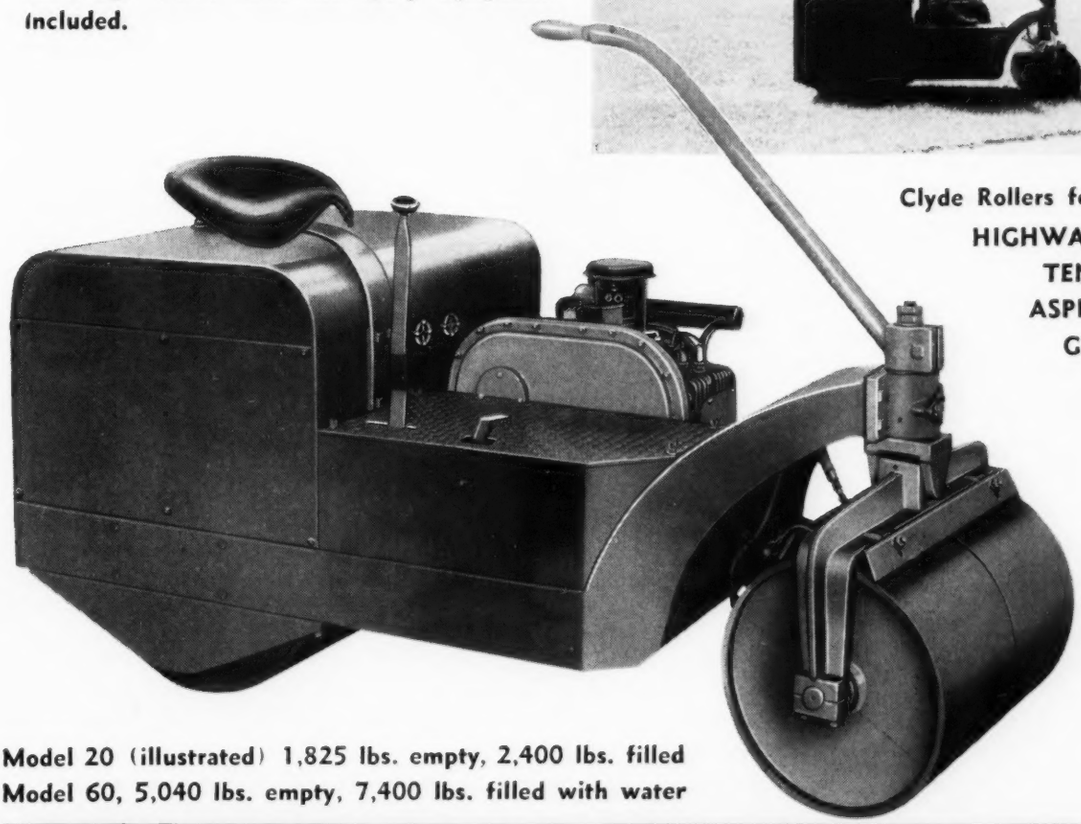
3 for 1 **AXLES**

THE TIMKEN-DETROIT AXLE COMPANY
DETROIT 32, MICHIGAN
WISCONSIN AXLE DIVISION, OSHKOSH, WISCONSIN
TIMKEN AXLE BRAKE DIVISION, DETROIT, MICHIGAN

CLYDE ROLLERS

TWO PRACTICAL AND POPULAR SIZES, SCIENTIFICALLY ENGINEERED TO GIVE BETTER ROLLING RESULTS

Band friction clutches allow instant travel direction change smoothly and noiselessly and result in a more satisfactory back and forth ironing motion. Short wheel base permits easy maneuvering in close quarters. Rugged and simple design assures less maintenance. Plate and angle construction welded into rigid unit. Both models work close to wall, curb or building to minimize hand finishing. Water tank and spray equipment included.



Clyde Rollers for:

HIGHWAY PATCHING
TENNIS COURTS
ASPHALT WALKS
GOLF COURSES
DRIVEWAYS
LAWNS
PARKS

Model 20 (illustrated) 1,825 lbs. empty, 2,400 lbs. filled
Model 60, 5,040 lbs. empty, 7,400 lbs. filled with water

CLYDE IRON WORKS, Inc.
Duluth 1, Minnesota
Subsidiary of Barium Steel Corp.

BEST BET FOR *Heavy Hauling*

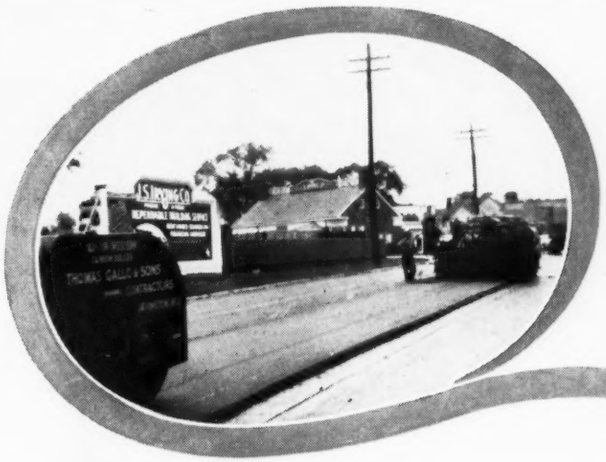
GMC TRUCKS *GASOLINE·DIESEL*

If you are interested in getting maximum performance at minimum operating and upkeep cost, it will pay you to investigate the new GMC heavy duty truck line. GMC builds heavy duty trucks specifically designed to fill the vast majority of heavy hauling requirements. More than that, GMC offers you the kind of powerplant . . . gasoline or Diesel . . . best suited to your job.

GMC's four heavy duty gasoline and two heavy duty Diesel engines comprise one of the widest choices of powerplants made available by any manufacturer in the truck industry. Combined with GMC's extensive range of chassis types, axle, transmission and equipment options, they permit selection of heavy hauling equipment that is exactly suited to a specific operation . . . and that is "tailor-made" to perform it at the highest peak of efficiency and economy.

If you are not getting the kind of results you should be getting from your present heavy duty trucks, consult your GMC dealer. He's a truck expert. He'll advise you . . . without prejudice . . . on the kind of power that will give you the best performance on your particular operation. For he sells and stands back of both types of GMC heavy duty power . . . Diesel and gasoline.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION



Texaco smooths the way

for Route 28 traffic through Westfield, N. J.

A heavy-duty Texaco Asphaltic Concrete pavement has been laid over the old, worn pavement on State Highway 28 through Westfield, N. J. The asphalt mix was supplied by Uniset Asphalt Sales, Scotch Plains, N. J., and laid by Thomas Gallo & Sons, Irvington, N. J.

As one of the "must" improvements in its 1947 State Highway program, New Jersey has smoothed the way for Route 28 traffic through Westfield with Texaco. A two-inch thickness of resilient, heavy-duty Texaco Asphaltic Concrete has been laid over the existing worn, rough pavement.

The same economical, effective method of resurfacing old pavements with Texaco has been practiced by road builders across the country for more than a quarter-century. In many instances, plant-mixed Texaco Asphalt surfaces used in this way are in excellent condition after 20 years service. They have demonstrated their durability on heavily-traveled trunk highways and city thoroughfares. Upkeep cost has been low.

For help with your street, highway or airport paving problem, call on a Texaco engineer, who is an Asphalt specialist. Write our nearest office.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Philadelphia 2 Richmond 19

TEXACO

TEXACO ASPHALT

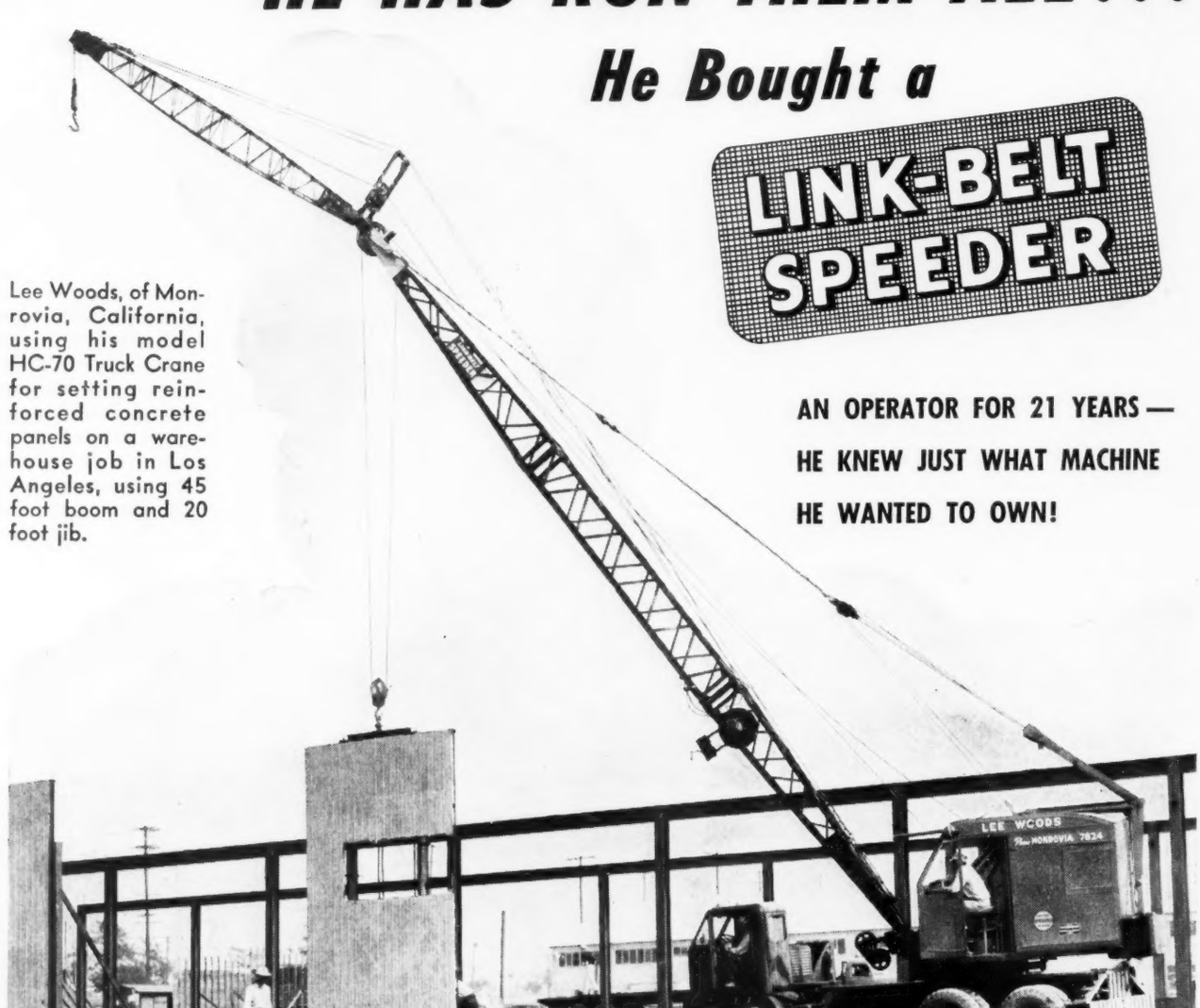
HE HAS RUN THEM ALL...

He Bought a

LINK-BELT SPEEDER

Lee Woods, of Monrovia, California, using his model HC-70 Truck Crane for setting reinforced concrete panels on a warehouse job in Los Angeles, using 45 foot boom and 20 foot jib.

AN OPERATOR FOR 21 YEARS — HE KNEW JUST WHAT MACHINE HE WANTED TO OWN!



Actual experience with practically every make of shovel and crane, including five different models of Link-Belt Speeders, taught Lee Woods a lot about these machines. When he decided to embark on his own business venture, he took the trouble to check all current models of truck-cranes, finally deciding on a Link-Belt Speeder HC-70. This machine is easy to operate, and provides perfect control for accurately spotting steel; has stability and abundant power, and is lively on the road, wasting no time getting from job-to-job.

With boom adjustable to various lengths, and with a ¾ yard clamshell and dragline bucket, it is readily available for a wide range of jobs. No wonder Lee Woods and his fellow Link-Belt Speeder owners keep profitably busy.

★ ★ ★

Twenty-five models of crawler and wheel-mounted Link-Belt Speeder Shovel-Cranes offer a size and type for every job. All convertible to every conventional front end attachment.

10,780

LINK-BELT SPEEDER

LINK-BELT SPEEDER CORPORATION, CEDAR RAPIDS, IOWA

Builders of the Most Complete Line of
SHOVELS-CRANES-DRAGLINES

Fire Chief Canvas . . . could have prevented this fire.

An overturned salamander . . . live sparks falling on a canvas tarpaulin . . . the untreated canvas ignites and disaster follows.

With Fire Chief Finished canvas it would have been different. Fire Chief will not support combustion. The canvas may char a little where the spark contacts it, but will not flame, soon goes out.

On all construction work, the few extra cents for Fire Chief Finished Canvas is cheap insurance . . . soon repaid by longer use, for Fire Chief is water, weather, mildew and wear-resistant, too.

Wherever flammable canvas presents a hazard, specify Fire Chief. Approved by both the Underwriters Laboratories and the Associated Factory Mutual Fire Insurance Companies.

WM. E. HOOPER & SONS CO.
New York PHILADELPHIA Chicago
Mills: WOODBERRY, BALTIMORE, MD.

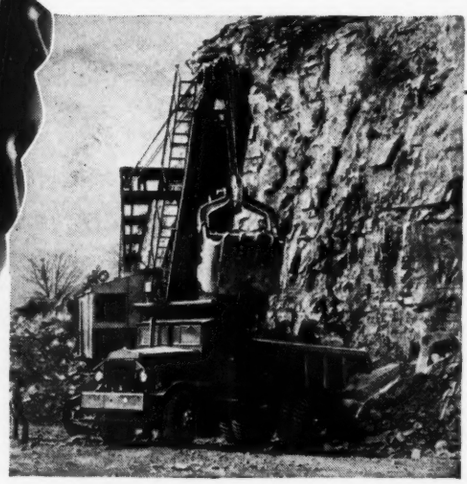
"Fire-Chief" Finished
TRADEMARK
U. S. Patent No. 2,299,612 and other patents

HOOPERWOOD COTTON DUCK

THE RIGHT TIRE FOR EACH JOB

ALL-WEATHER EARTH MOVER for drawn vehicles and general traction

SURE-GRIP for maximum traction on drive wheels



AS TOUGH as they come!

BECAUSE it takes a bruiser to beat a tire-bruising job, this tire gets first call on the toughest construction jobs. It's Goodyear's Hard Rock Lug — *tougher* than work tires usually come—*tougher* because its massive lug bars armor tread and sidewalls against cuts — tougher because its extra-thick undertread armors the carcass against bruises. And see how that self-cleaning universal two-way tread provides full traction reverse or forward!

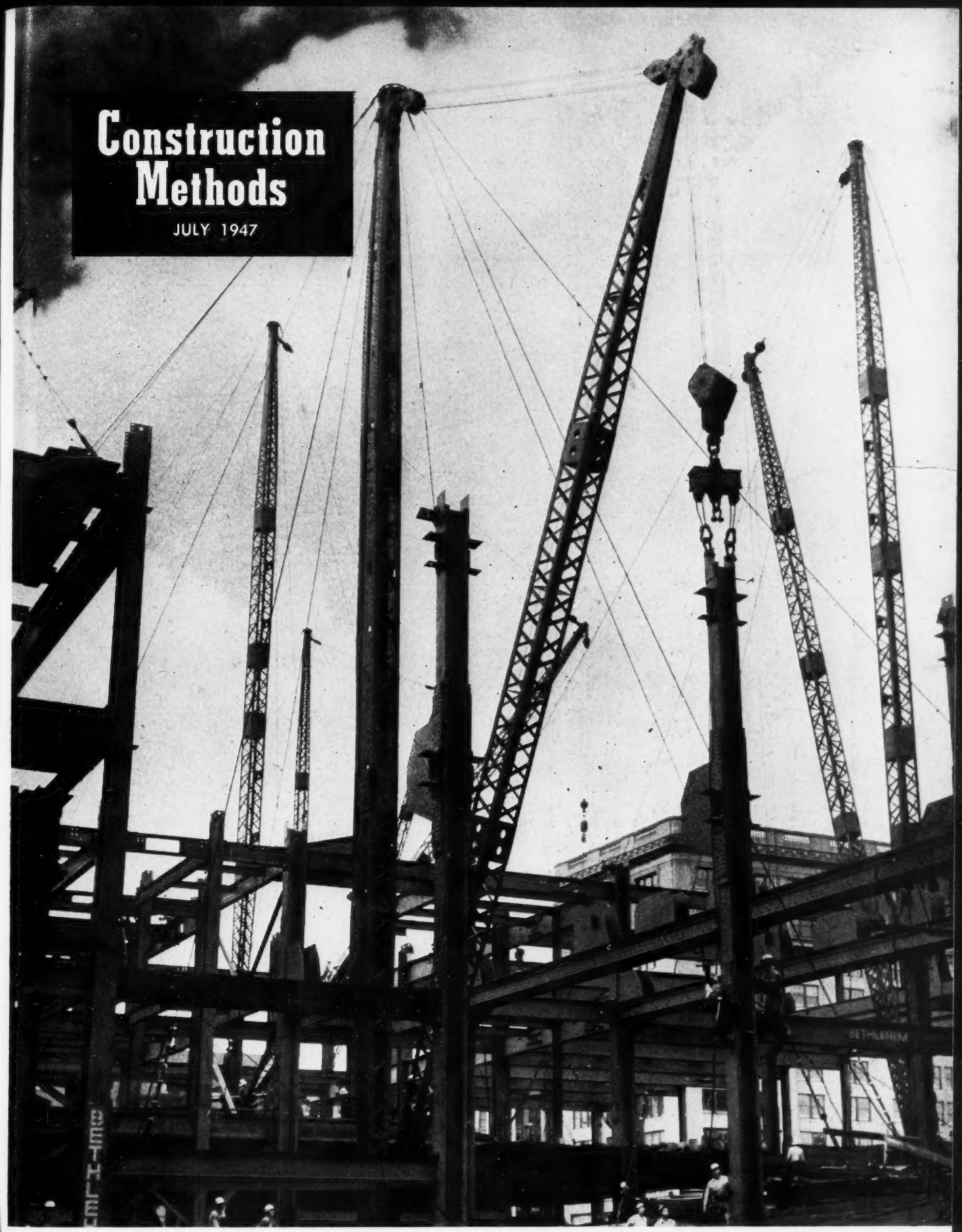
That's why this brute of a tire is *first choice* on tough jobs. It typifies the job-proved Goodyears available for *any* job, and is one more reason why year after year, *more yards are moved on Goodyear off-the-road tires than on any other kind!*

BUY and SPECIFY GOODYEAR —it pays!

All-Weather, Sure-Grip—T.M.'s The Goodyear Tire & Rubber Company

GOODYEAR

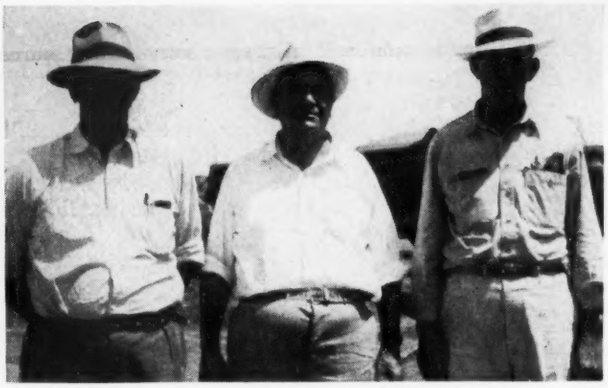
MORE YARDS ARE MOVED ON GOODYEAR OFF-THE-ROAD TIRES THAN ON ANY OTHER KIND



DERRICKS PIERCE BOSTON SKY

UP GOES STEEL—13,500 tons of it—for one of Boston's newest and tallest skyscrapers, the 26-story home office building for John Hancock Mutual Life Insurance Co. Structure will rise 417 ft. above sidewalk and will have 625,000 sq. ft. of working floor space. Big 50-ton guy derrick with 100-ft. mast, 90-ft. boom and six-sheave load block sets heavy column. Rig weighs 26 tons and is guyed with twelve 1¼-in. cables. Six other 18-ton derricks erect lighter steel on job. Turner Construction Co. is general contractor for $15,000,000 building designed by Cram & Ferguson, and Bethlehem Steel Co. is setting the steel.

EXTRA CARE was taken last year in filling old river channels under upstream toe of embankment. Gebhard rollers, bulldozers and disk harrows gave new fill a good working over.



DIRTMOVERS at Fall River Dam. RALPH MYERS (center), head of Ralph Myers Contracting Corp., is flanked by PETE JACKSON (left), his general foreman, and B. L. BRITT, assistant resident engineer, U. S. Corps of Engineers.

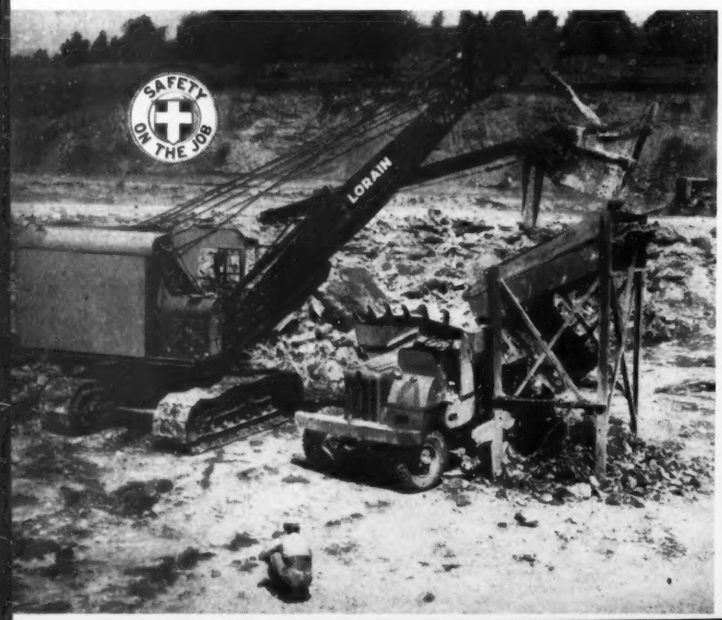
BORROWPITS were opened up last year with this Caterpillar elevating grader loading into Euclid wagons. Stripping was not necessary here, for pit is in cultivated field in abandoned farm in reservoir area.

ducing riprap in the same quarry, stockpiling it nearby until the fill is further along. Yakimo loads the riprap with a Lorain shovel into Koehring Dumptors through a scalper made up of sloping railroad rails set on a structural frame which removes all fines. The scalper is moved by the shovel.

The dam has a crest length of 6,450 ft., of which 910 ft. is concrete spillway and non-overflow section. The embankment, which includes 3,600,000 cu. yd. of rolled fill and 245,000 cu. yd. of riprap and blanket, will be left open at the diversion channel until the stream can be diverted through low slots in the concrete section next year. All work is scheduled for completion in 1948. Ralph Myers, head of his firm, spends a lot of time on the job; L. L. Stevenson is his superintendent.

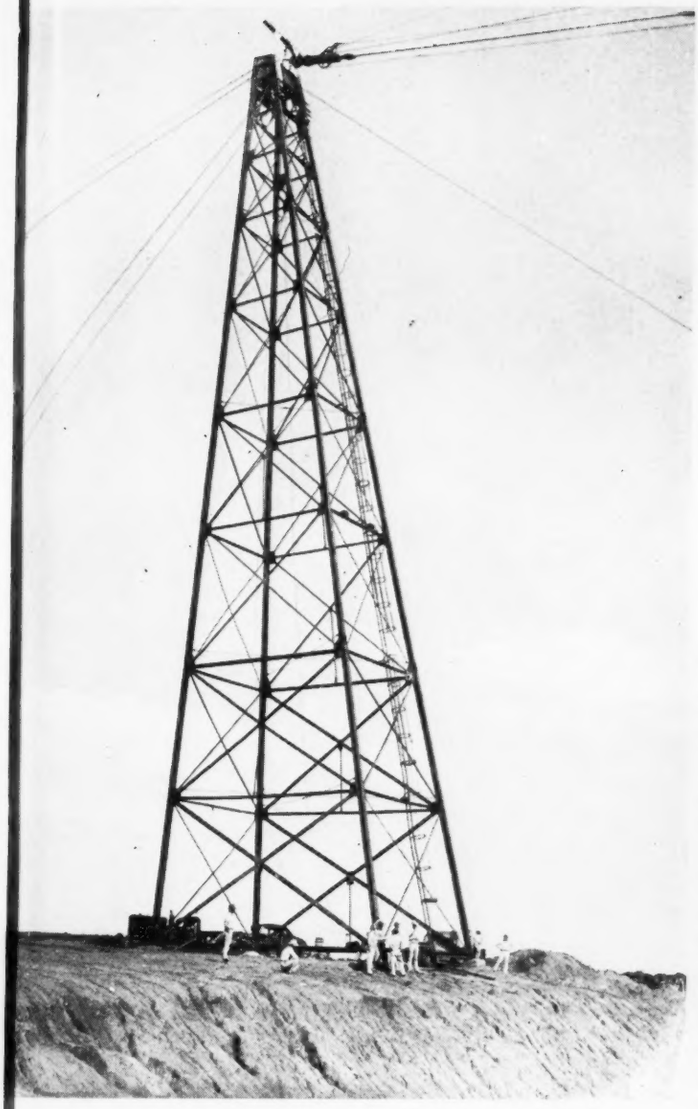
SIMPLE SCALPER (below) of sloping railroad rails mounted on top steel frame removes dirt and small stone as Lorain shovel loads riprap into Koehring Dumptor. John Yakimo, rock subcontractor, is job safety conscious. Two safety precautions are shown here: (1) Dumptor driver leaves his rig during loading, and (2) Rock in loaded truck is prevented from spilling forward over engine and operator by teeth welded to top of body.

RUGGED LIFE for a Euclid wagon. Sticky mud built up inside this hauling unit (below), working on cutoff trench excavation, so the Northwest shovel operator jarred the mud loose by simply swinging his bucket against the side of wagon hard enough to lift it off the ground. A few such shakings cleaned the wagon.



FALL RIVER DAM . . .

Rocking Tower Supports Highline Cableway



It Rocks . . .

This 150-ft. fixed tail tower on concrete cableway system at Fall River Dam in Kansas is designed to eliminate tension in tower legs by permitting them to lift as much as 6 in. off their bases with shifts in loading.

Like This . . .

Battered front leg of tail tower kicks up 1 in. as shown here as backstays pull tower backwards, through drag over top saddle, when load is released from main gut line.

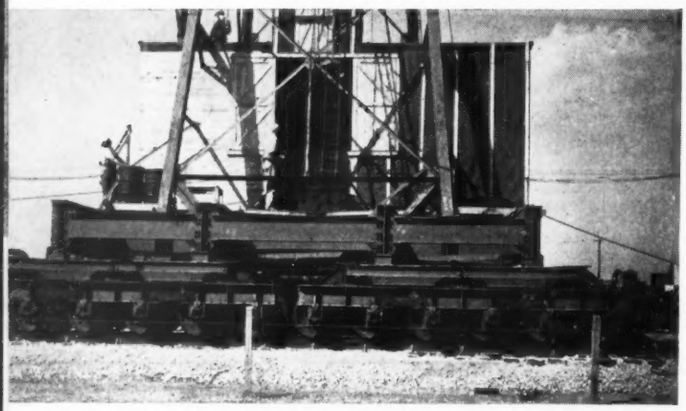
←

BACKSTAYS ON TAIL TOWER are tied to heavy concrete anchorage by five big clips and four clamps (left). Each line is broken at take-up clamp (below) with ends of each part socketed into half of double clamp unit. Small cables are tower guy lines.

CONCRETE PLACING EQUIPMENT and methods at Fall River Dam are in keeping with the magnificent aggregate plant and the excellent earthmoving operations. All concrete—consisting solely of the 135,000-cu.yd. spillway and outlet structure in the old river channel—is being placed by a 15-ton highline cableway of 1,500-ft. span whose feature is a rocking fixed tail tower 150 ft. high. Working with this unique tail tower is a 100-ft. traveling head tower, mounted on curved double tracks high on the south or right-hand bluff of the valley. The concrete plant, containing two 4-yd. Koehring mixers and Johnson batching

HEAD TOWER travels on curved double tracks, with all four rails set at same level without superelevation or banking. This view, taken from top of concrete plant, shows straight track at right over which flatcar operates in transferring concrete buckets from mixers to cableway.

TRAVELING HEAD TOWER, 100 ft. high, contains operating house and control apparatus. Steel tower is guyed to heavy concrete counterweight for additional stability.



TO DISTRIBUTE WEIGHT and toe thrust of heavy head tower over railroad tracks, front and back pairs of legs are each carried by double 12-wheel trucks, 48 wheels in all. Note weight is transferred from frame base girders to carriages through four compensating beams.

and cement units, is located at the east end of the head tower runway. A straight standard-gage track leads from the concrete plant across the front of the head tower runway, and 4-yd. concrete buckets are delivered to the cableway on a flatcar over this track.

The fixed tail tower sits on natural ground just beyond the spillway excavation, an area that will later be covered by the end of the earth fill. It is a 4-legged

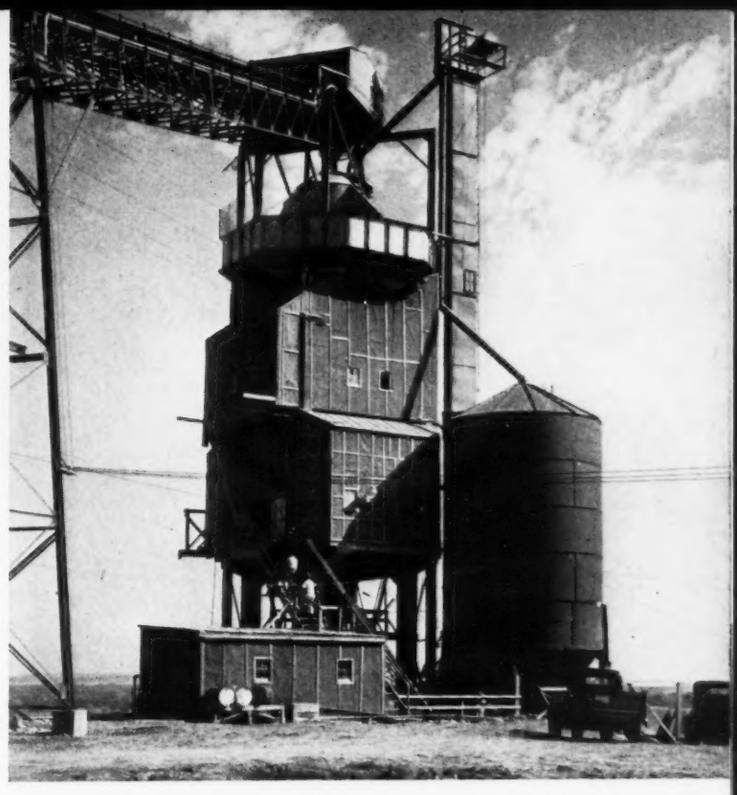
Here's the Power...

Shifting of flatcar carrying concrete buckets between mixer plant and cableway is done with Case farm tractor.

And Here's the Hitch...

Tractor is connected to flatcar by an offset hitch as shown here that permits tractor wheels to straddle one rail. Collar on tractor engages vertical rod on car assembly.

MAKING THE JOB GO at Fall River Dam are **L. F. FAHRBERGER**, resident manager of Arcole Midwest Corp., general contractor on the project, **N. B. BEDERMAN**, president of the firm; **Mel W. PARSE**, construction engineer for the Tulsa District, and **John R. (Moose) SODERBERG**, resident engineer for Corps of Engineers.



CENTRAL MIXING PLANT, located at east end of head tower runway, houses two Koehring 4-yd. mixers and Johnson batching and bulk cement handling equipment. Aggregates are distributed to various bins at top of plant from single belt leading from aggregate plant.

tapering steel tower, 28x40 ft. in plan at the base, with H-beam legs amply braced by horizontal and diagonal struts. Each leg rests on a separate concrete pedestal, tops of the two forward bases being battered normal to the sloping front tower legs.

Extension anchor bolts, with the nuts set 6 in. above the base plates, permit the tower to rock on its four legs with variations in load positions. Thus, any one or more legs can raise as much as 6 in. off the pedestal before the anchor bolts take hold. This feature eliminates all tension stresses in the tower legs and upward pull in the pedestals, for the base plates never rise to the full permitted height. Base plate movement rarely exceeds 2 in.

The main gut line is a 2¾-in. cable ending in a shackle just forward of the top of the tail tower. Two backstays of the same size cable run from the shackle back over a wooden saddle at top of tower to two widespread anchorages far behind the tower. These backstops are separate, that is, they are each fixed to the shackle. Thus as the head tower travels either way from cable centerline, the corresponding opposite backstay takes more and more of the load. Backstays are not fastened to the head tower, so the rocking action of the tower comes solely from the friction of backstays over the saddle. The tower is also guyed by four lines—loose enough to permit rocking —placed mainly for wind protection. The back pair of guys is fastened to the backstay anchorages.

During concreting operations the maximum live load on the cableway, including a 4-yd. loaded bucket, is 10 tons. After all concrete has been placed the head tower will be fixed and guyed to handle gate and control units weighing up to 20 tons.

Arcole Midwest Corporation, Chicago, general contractor on the project, is doing all of the concrete work. N. B. Bederman is president of the company. L. F. Fahrberger is resident manager on the job, assisted by Wm. Watson, general superintendent. John R. Soderberg is resident engineer for the Corps of Engineers.

Fall River Dam, Aggregate Plant Next Page

A Bomb Here Would Cripple Construction

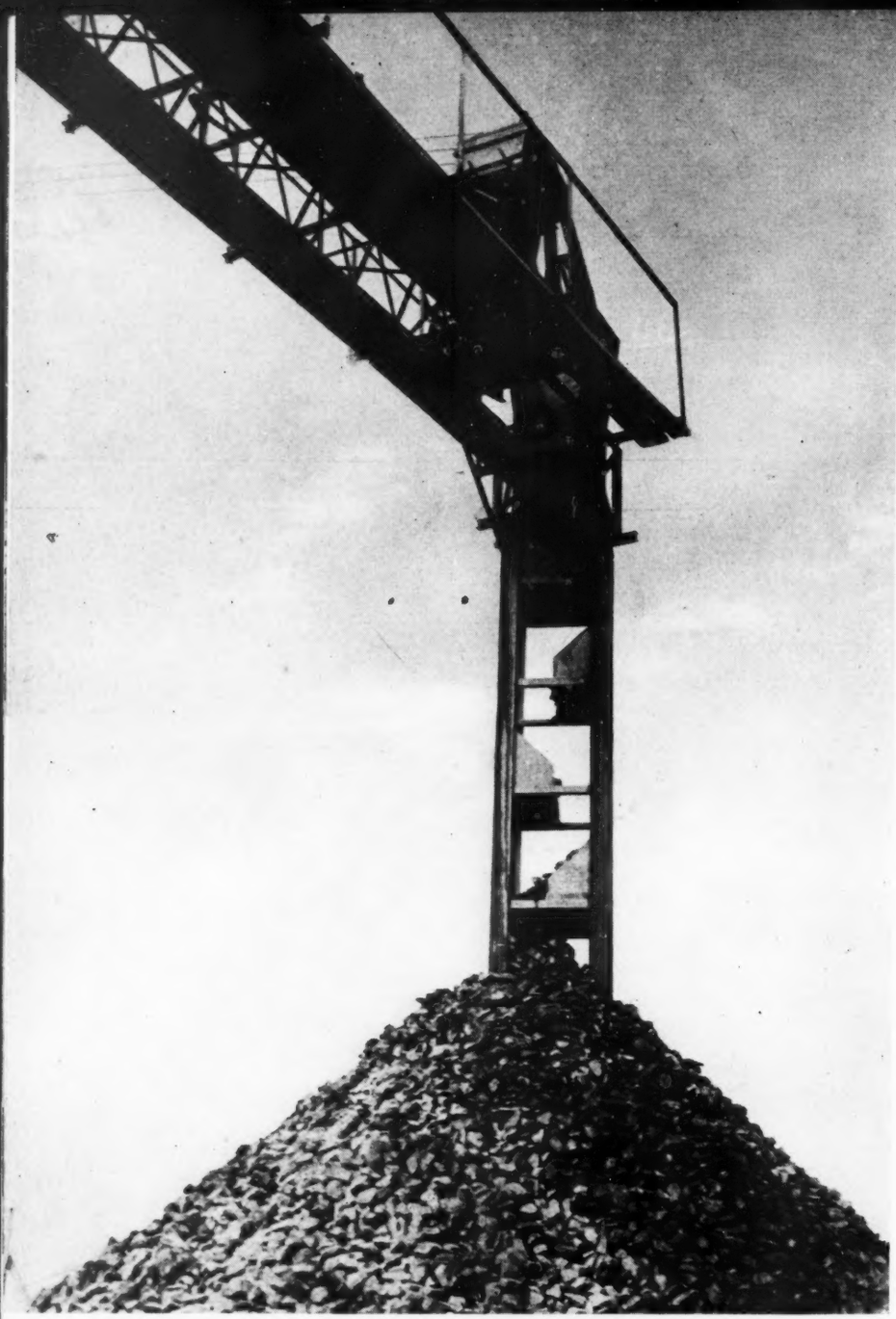
OFFICERS AND DIRECTORS of the Associated General Contractors of America are all leaders in the contracting fraternity. Here they are, representing a lot of construction talent on display at the recent A.G.C. Spring meeting in Seattle, Wash., where the vexing problems facing the industry today were discussed. Left to right: Standing: GEORGE ATKINSON, San Francisco; HARRY DICK, Portland, Ore.; CARL JANSEN, Pittsburgh; GLEN MAXON, Dayton, O.; ARTHUR S. HORNER, Denver; GAYLE ARMSTRONG, Roswell, N. Mex.; and CHARLIE EMBREY, A.G.C. staff member who flits mysteriously from hither to yon at every meeting tying up all the loose ends. Seated: MABEL McCARTHY, brightest star in A.G.C. headquarters in Washington; DWIGHT WINKELMAN, Syracuse, N. Y., national vice-president; FORREST PARROTT, Sioux City, Ia., national president; H. E. (Doc) FOREMAN, A.G.C. managing director; and WALTER L. COUSE, Detroit.

FALL RIVER DAM . . .

Sand and Stone Made on Job

RISING OUT of the prairies of Southeastern Kansas is a most modern and elaborate plant to produce all the aggregate for the concrete spillway section of Fall River Dam. Considering the amount of concrete to be placed—less than 150,000 cu. yd.—the plant might seem too elaborate. However, the veteran Materials Service Corp., Chicago, subcontractor on aggregate production for Arcole Midwest Corp., general contractors, undoubtedly knows what it is doing and probably has another spot in mind for this plant.

The only coarse aggregate available is crushed limestone from a nearby source. U. S. Corps of Engineers tests on local sand combined with the crushed stone failed to pass the accelerated freezing and thawing tests. But concrete made from these coarse aggregates and sand crushed from the same rock proved very satisfactory, so specifications were changed to call for manufactured sand. Thus the aggregate plant is complete, turning out five sizes of aggregate: sand, No. 4 to ¾ in., ¾ to 1½ in., 1½



Clean, Well-Graded Aggregate . . .

Simple stacker deposits 3- to 6-in. stone in neat pile at Fall River Dam aggregate plant. This material is transported 192 ft. from rinsing screen by 24-in. belt.

From This Muddied Stockpile—→

Quarry-run rock from source in reservoir area was stockpiled near aggregate plant last winter. Link-Belt shovel loads trucks for 500-yd. haul to primary crusher.

MAZE OF CONVEYORS is really a well laid out, efficient and high-capacity aggregate plant. Main feed from primary crusher to scalping screen is at right. In left distance is conveyor to concrete plant. Dorr sand classifier is at lower left. Center conveyors lead from rotary crusher and log washer. Cross conveyor in center brings breakage from rotary rinsing screen in background to log washer discharge belt.

to 3 in., and 3 to 6 in. It is rated at 250 tons per hr.

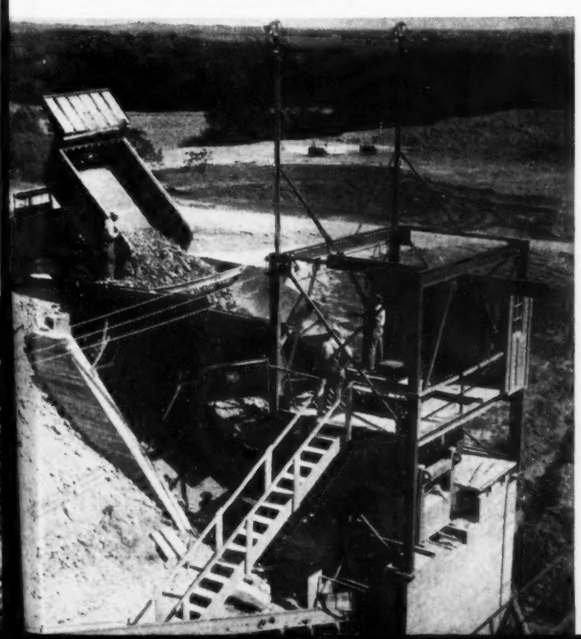
The plant contains a primary crusher, a secondary rotary crusher, sand pulverizer, two rotary screens, three vibratory screens, a log washer and a sand classifier for removing the extra fines. There are 14 belt conveyor flights, an apron feeder and a sand elevator to move material through the plant. Installed electric motors total 765 hp., and belt conveyor flights, from 18 to 36 in. wide and up to 450 ft. long, total 1,960 ft.

Source of material is a stockpile of quarry-run limestone full of clay and dirt. From this pile rock is loaded by a Link-Belt shovel into end-dump trucks for a 500-yd. haul to a Pioneer 42in.x14 ft. apron feeder. Discharge from this feeder is over a bar grizzly, which bypasses everything over 4½ in. into a Pioneer 30x42-in. primary jaw crusher. A 36-in. main feed belt takes the grizzly bypass and crusher run to a Link-Belt rotary scalping screen.

The scalper contains two 3-in. and two 6-in. sections, and the 3-in. sections are enveloped for three-fourths their combined length by an outside 2-in. screen. All material under 3 in. passes through to the 2-in. screen, where

Here's the Start . . .

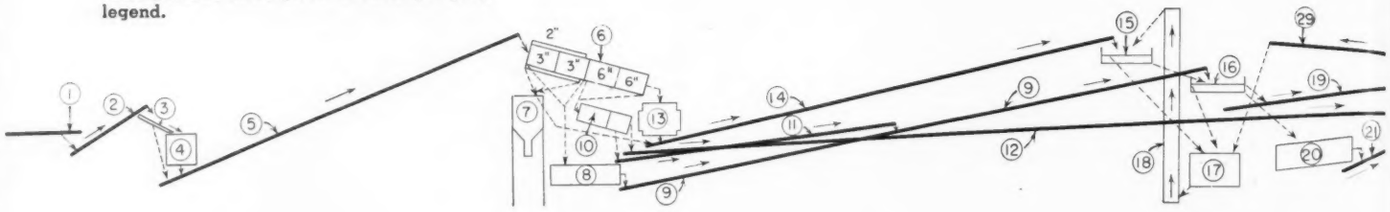
Aggregates (below) start through the plant from a truck dumping into a Pioneer apron feeder, thence over a bar grizzly into a Pioneer jaw crusher. Main feed 36-in. belt leads off to left.



Here's the Finish . . .

From tunnel running under all five stockpiles (below), 36-in. reclaiming belt discharges on to 36-in. feed belt leading to mixer plant 400 ft. away. Conveyor at right is being installed to return small stone back to pulverizer for producing additional sand.

FLOW DIAGRAM shows movement of material through various processes. Numbers correspond to those given in accompanying legend.

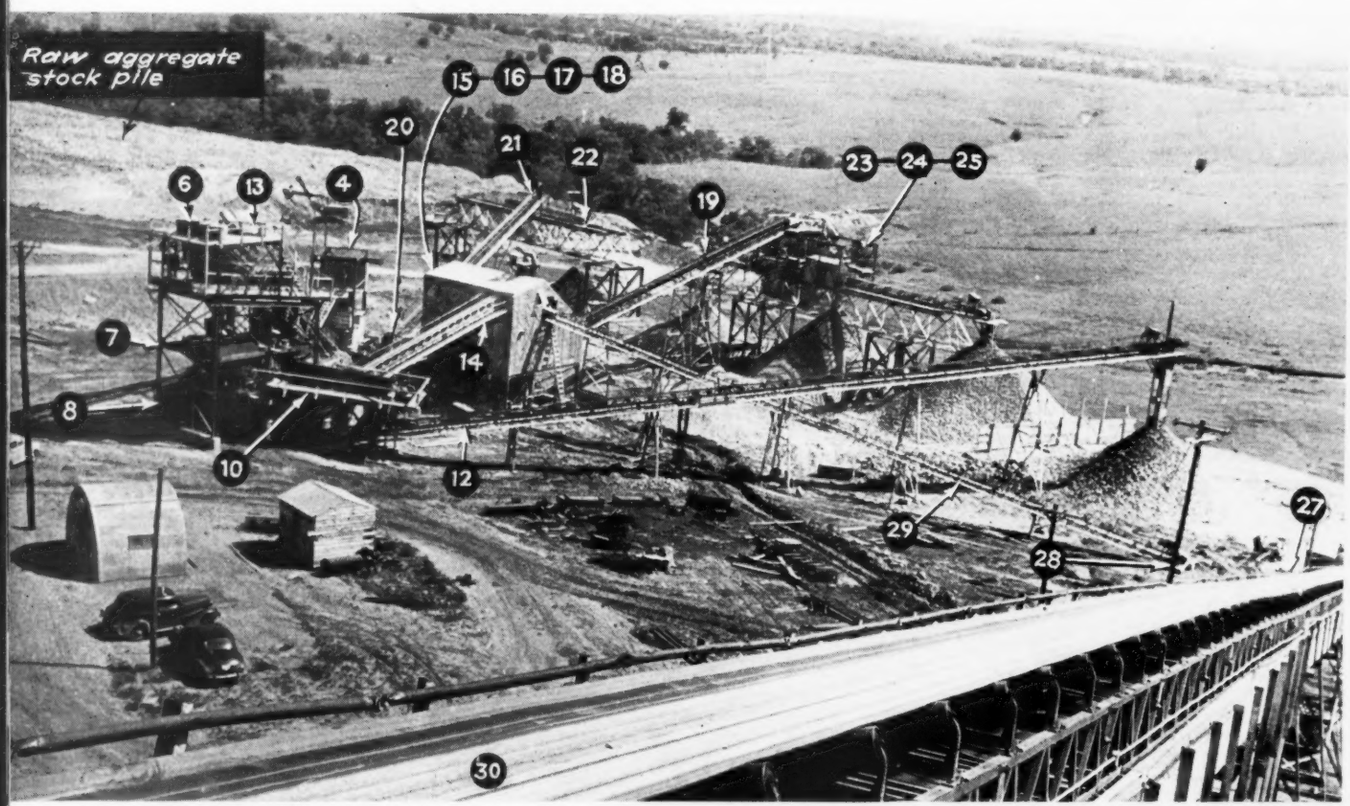


LEGEND FOR FLOW SHEET AND GENERAL VIEW OF PLANT

(1) Truck dump; (2) Pioneer 42 in.x14 ft. apron feeder; (3) Bar grizzly, 4½-in. openings; (4) Pioneer primary jaw crusher, 30x42-in., 150-hp. motor; (5) Main feed belt, 36-in., 158 ft. long, 20-hp. motor; (6) Link-Belt rotary scalping screen, 15-hp. motor;

(Belt lengths are c.c. bearings)

(7) Road aggregate (2-in.) storage bin; (8) Eagle log washer, 7x30 ft., 100-hp. motor; (9) Conveyor, 24-in., log washer to 3x16-ft. screen, 60 ft. long, 10 hp.; (10) Rotary rinsing screen for 3- to 6-in. stone; (11) Reclaimer belt, 18-in., 60 ft. long, breakage in rinsing screen to log washer belt, 10 hp.; (12) Conveyor, 24-in., 192 ft. long, 3- to 6-in. stone to stacker; (13) Symons 48-in. rotary

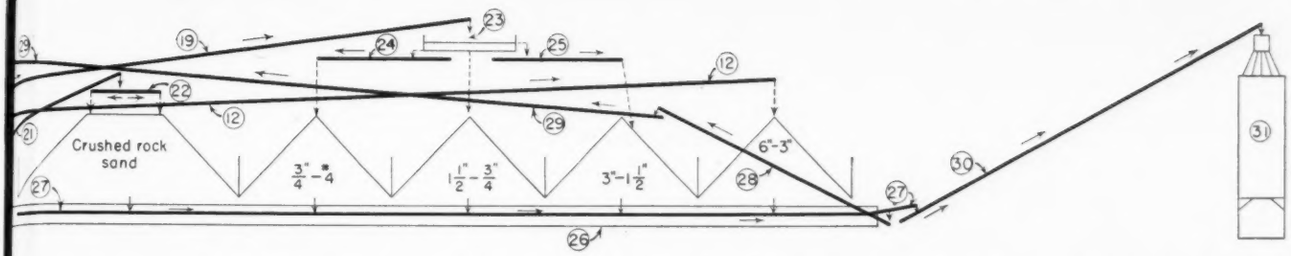


LAYOUT OF PLANT as seen from top of concrete plant. Numbers correspond to items in flow sheet and in legend.

part of the 2- to 3-in. sizes are bypassed to a road aggregate storage bin. All other small material is chuted to an Eagle log washer where all clay and dirt are scrubbed loose and washed away. Part of the stone from 3 to 6 in. is shunted to a rotary rinsing screen and thence goes direct to a stacker and storage pile via a 24-in. belt. The remainder passes through a 48-in. Symons rotary crusher for reduction to 3-in. maximum size. This crusher feeds on to a 30-in. belt leading to a 4x16-ft. Symons vibrating washing screen. Surplus from the road aggregate bin is chuted to this same belt.

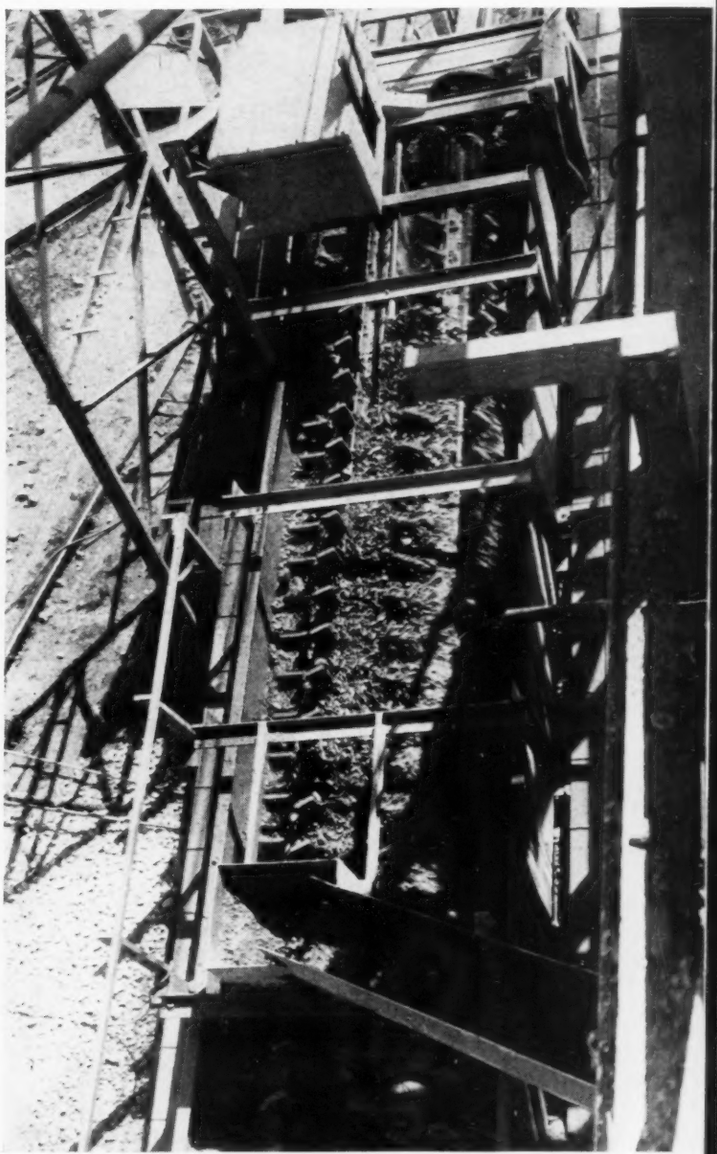
From the log washer a 24-in. belt leads to a 3x16-ft. Symons double-deck screen housed near the washing screen. Here all sizes from No. 4 sand to 3-in. stone are dumped on to a 30-in. belt leading to the stackers at the finished storage piles. The finer stuff goes direct to a Dorr sand classifier. Breakage, and anything under 3 in. in the rotary rinsing screen, is bypassed by an 18-in. belt on to the log washer discharge belt.

Meanwhile, sizes below ¾ in. are discharged from the washing screen on to this screen, while larger sizes drop down into an Allis-Chalmers Pulverator or sand roll. From the pulverizer all crushed sand is elevated to the top of plant by a Link-Belt vertical elevator and is sent back through the washing screen, and the fines are bypassed through the second

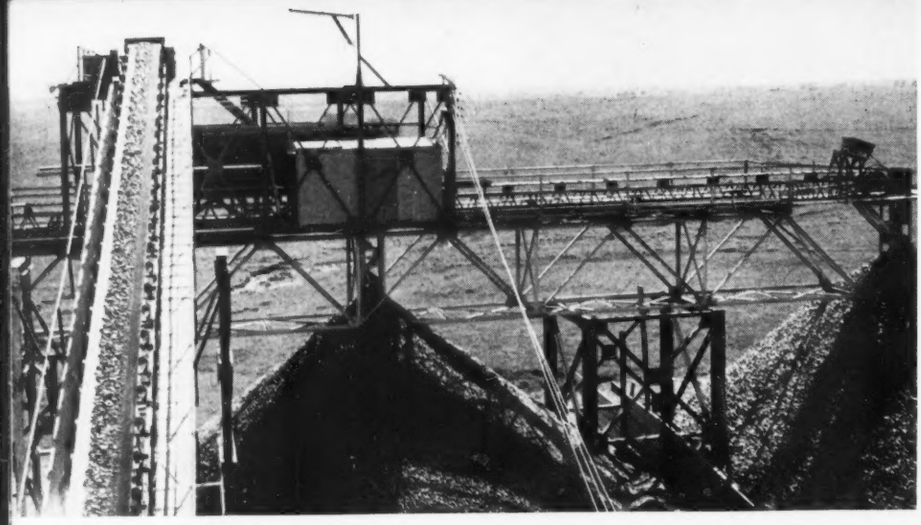


crusher, 100 hp.; (14) Conveyor, 30-in., 57 ft. long, rotary crusher to 4x16-ft. washing screen, 10 hp.; (15) Symons 4x16-ft. washing screen, 10 hp.; (16) Symons 3x16-ft. double-deck screen, 7.5 hp.; (17) Allis-Chalmers Pulverator sand roll, No. 424, 150 hp.; (18) Link-Belt vertical elevator, 10 hp.; (19) Conveyor, 30-in., 93 ft. long, to stackers, 15 hp.; (20) Dorr sand classifier, 10 hp.; (21) Sand conveyor, 18-in., 157 ft. long, 10 hp.; (22) Reversible 18-in. shuttle belt, 40 ft. long, over sand pile, 5 hp.; (23) Symons double-deck 3x16-ft. sizing screen, 7.5 hp.; (24) Conveyor for No. 4- to ¾-in. stone, 18-in., 29 ft. long, 5 hp.; (25) Conveyor for 1½- to 3-in. stone, 18-in., 55 ft. long, 5 hp.; (26) Reclaiming tunnel, 9 ft. dia., 450 ft. long; (27) Reclaiming belt, 36-in., 450 ft. long, 20 hp.; (28) Return conveyor, first flight, 18-in., 45 ft. long, 10 hp.; (29) Return conveyor, second flight, 18-in., 165 ft. long, 15 hp.; (30) Main feed conveyor to concrete plant, 36-in., 400 ft. long, 75 hp.; (31) Concrete plant, 2 Koehring 4-yd. mixers.

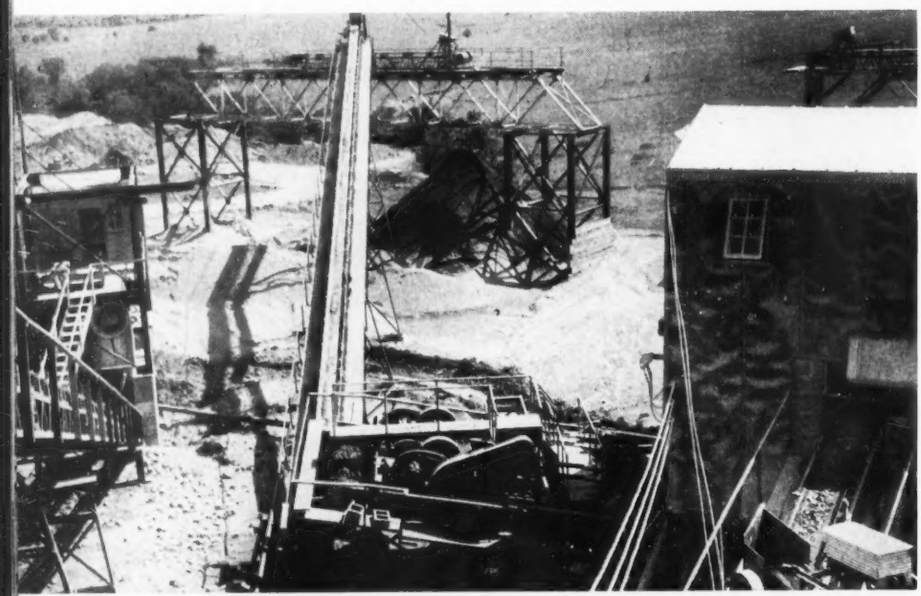
FIRST PROCESSING STAGES after primary crushing are shown here. Main feed belt at upper right discharges into rotary scalping screen, which divides material four ways: (1) Into Symons rotary crusher, (2) Into road aggregate storage bin, below and to left of scalper, (3) Through chute into log washer at lower right, and (4) To rinsing screen for large stone out of view to left. Cross belt in lower foreground returns breakage from the rinsing screen.



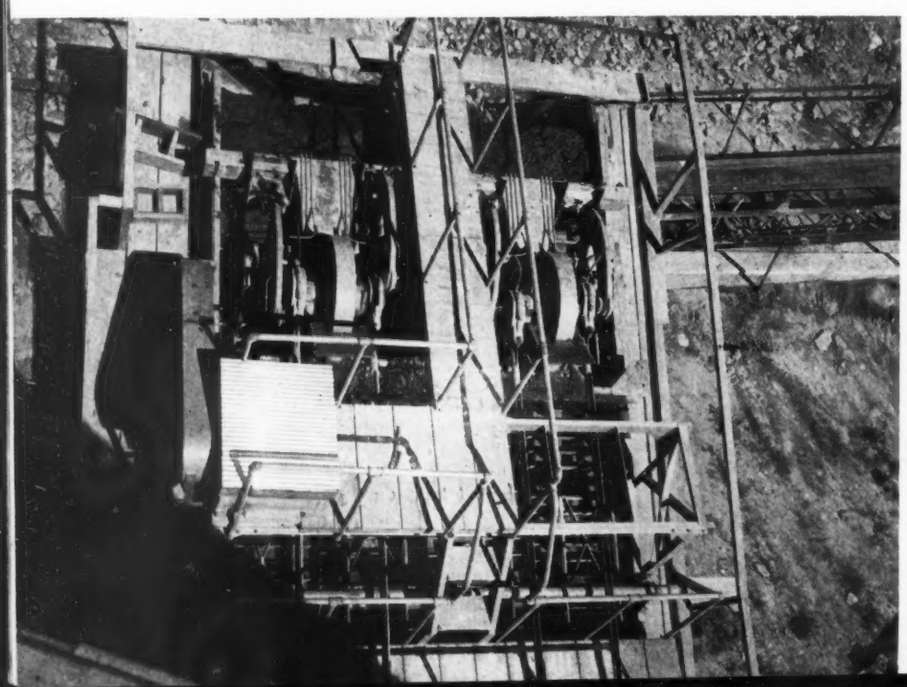
LOG WASHER scrubs all dirt from minus 3-in. stone (except road aggregate) separated out by scalping screen and chuted to scrubber. This process really cleans the material.



FINAL SEPARATION of intermediate sizes—No. 4 to ¾-in., ¾ to 1½-in., 1½ to 3-in.—is done by double-deck sizing screen on steel towers and trusses, which also carries two distributing belts for outer stock piles.



MANUFACTURED SAND is given final processing in Dorr classifier (center foreground) which removes silt and excess fines. Sand then goes by 18-in. belt to truss-supported shuttle conveyor for stockpiling in background. Primary crusher is at extreme left. Building at right houses washing and sizing vibrating screens, sand pulverizer and vertical elevator.



screen to the classifier. The classifier removes all ultra-fine material.

The 30-in. belt from the second screen, carrying material from No. 4 sand to 3-in. stone, discharges on to a double-deck 3x16-ft. Symons sizing screen carried on steel towers and trusses. This screen discharges No. 4 to ¾-in. material on to an 18-in. belt leading to a stacker over the storage pile for this classification, dumps the ¾-1½-in. size direct into a stacker for this pile, and the 1½-3-in. size on to another 18-in. belt leading to another stacker and storage pile.

Sand from the Dorr classifier goes by 18-in. belt to an 18-in. reversible shuttle belt on a truss carrier over the sand storage pile. All five storage piles are in line over a 9-ft. reclaiming tunnel, 450 ft. long, made up of tunnel liner plates. Gates in top of tunnel under each pile permit loading of any material desired on to a 36-in. reclaiming belt discharging at one end of the tunnel.

From the reclaiming belt, materials dump on to another 36-in. belt 400 ft. long leading to top of concrete plant, where they are stored in five bins, one for each size aggregate. In trial runs before concrete mixing got under way, it was found that the plant as set up was inadequate in sand production. To meet this deficiency, a return system of two flights of 18-in. conveyor was installed to permit running stone from the reclaiming belt back to the sand pulverizer.

Clean and well-graded aggregate is being produced from a source that at least looks discouraging. All aggregate is washed somewhere along the line after passing through the crushers. All belting is new stock from Hewitt Rubber Co. Idlers for the two 36-in. conveyors are Rex equipment originally used on the Shasta Dam gravel supply conveyor. Pioneer idlers carry the 18- and 24-in. belts, and Barber-Greene idlers are on the 30-in. conveyors. Motors are equally divided between Allis-Chalmers and General Electric.

James Rooney, as superintendent for Materials Service Corp., installed the plant and is now in charge of operation. John R. Soderberg is U. S. resident engineer. U. S. Corps of Engineers.

←

ADOPTED from the mining field, the Dorr rake-type classifier does a neat job of freeing the crushed sand of all silt and too-fine material.

Cited for Service

DOC FOREMAN

KEEPING four thousand contractors—a breed noted for their independence and rugged individuality—in line is a mighty big job. But Herbert E. (Doc) Foreman, as Managing Director of the Associated General Contractors of America, takes that job in stride. In his genial, affable manner, he handles his 4,178 members with a soft glove—but there is an iron hand within that glove, and he fights barehanded when necessary. The current high membership, greatest by far in the 28-year history of the association, is a tribute to his successful direction of A.G.C. affairs.

However, managing the biggest association of general contractors in the country is only part of his duties. Even more important, and far more strenuous, are outside activities, such as labor relations, favorable and bad legislation, taxes, public relations, materials and equipment supply and prices, apprenticeship training, construction safety, governmental restrictions and regulations and the vagaries of the construction market—all association problems. All in all, Foreman certainly has his hands full with the important job he holds.

Doc, as he is known throughout the construction world, is a native of Dayton, Ohio, and graduated in civil engineering from Ohio State in 1919. After a year of teaching and several years in engineering practice, he joined the Ohio State Highway Department, eventually working up to Assistant Director. While with the state he received a law degree from Franklin University.

In 1929 he joined the A.G.C. in Washington and was named Assistant Managing Director, as the righthand man to the late Ed Harding, in 1932. During the hectic NRA days he was technical advisor in the development of codes in the general contracting field.

Upon the sudden death of Harding in October, 1940, Doc was appointed Managing Director of the association. By that time the nation was well into the defense construction program, which soon turned into war construction. All energy of the A.G.C. and its members was thrown into the important job of mobilizing construction for war. When peace finally came, the industry looked back on 50 billion dollars worth of war construction, much of which was done by A.G.C. members.

Doc believes that the construction industry is of vital importance to the growth and progress of the country, and that general contractors, with their central responsibility for executing the work, are in a key position in the industry. He expresses the hope that the A.G.C. always shall be a powerful force working for the best interests of the public and the industry.

Doc Foreman is one who fights for his beliefs, for his association and for construction. Sometimes he goes down, but he always goes down swinging.

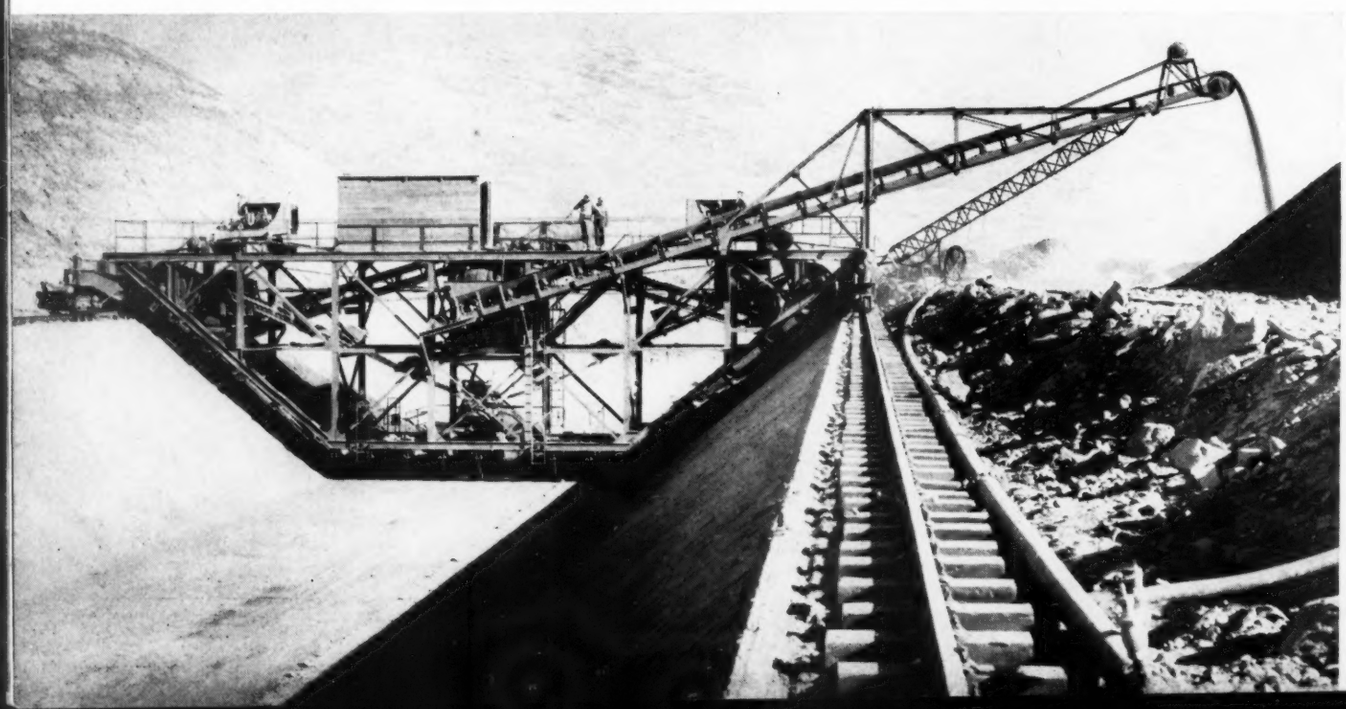
PARADE OF FINISHING RIGS moves down Friant-Kern Canal cut in California and builds complete lining as it passes. Equipment is (l. to r.): subgrade trimmer, water-spray jumbo, concrete liner, expansion joint cutter, joint calker, and spray-curing jumbo.

SPECIAL RIGS BUILD FRIANT-KERN CANAL

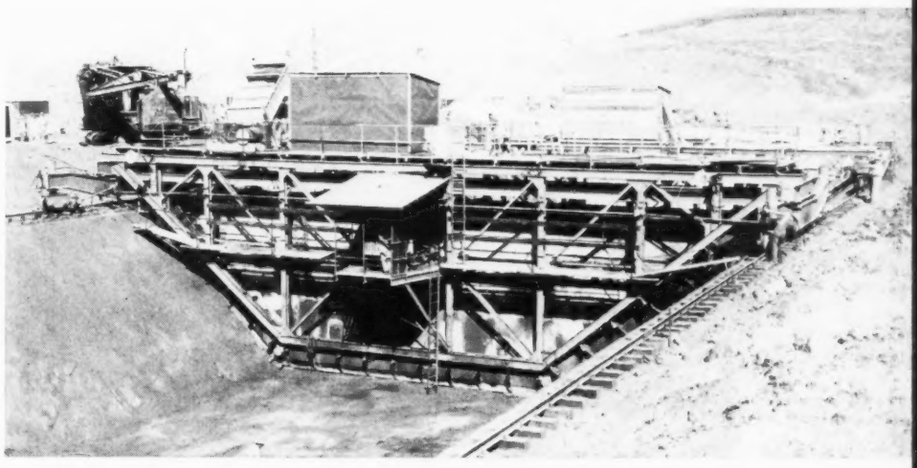
A TRAIN OF SPECIAL, self-propelled canal-building equipment that takes over after rough excavation and proceeds down the cut leaving a finished lining in its wake is speeding Peter Kiewit Sons' Co.'s construction operations on a section of the Friant-Kern Canal in California. Shaped to canal cross-section, and spanning 85 ft. across the ditch, the machines finegrade the canal prism, moisten the subgrade, line it with concrete, cut and calk expansion joints, and spray on curing compound—all with a minimum of hand labor.

Key rigs are a canal trimmer and a lining machine, designed by Clyde W. Wood of Los Angeles and built by Guntert and Zimmerman, Stockton, Calif. Each machine rides on four two-wheel trucks and spans between two rails set to accurate line and

NEAT CUT is left by trimming machine (below) as its two endless bucket chains finegrade canal section. Rig can make 8-in. cut while traveling 1 ft per min.



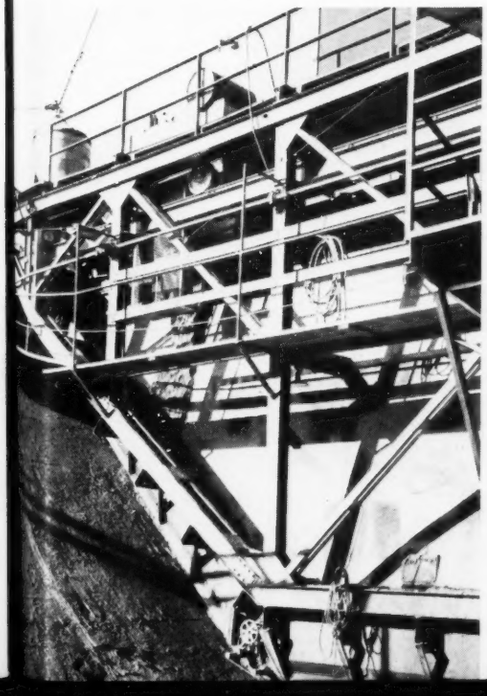
CANAL TRIMMER discharges spoil through conveyor belt system. When banks are too high, rig dumps directly into trucks operating in canal bottom.

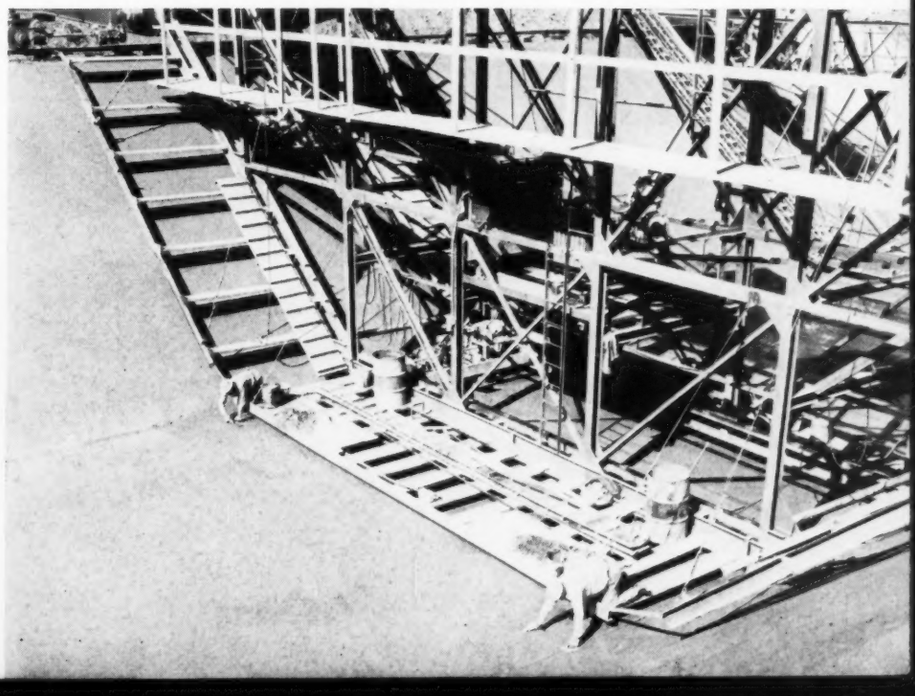


MACHINE LINES CANAL with concrete supplied by paver on bank. Two Caterpillar diesels operate lining machine, one furnishing tractive power, the other running a generator that supplies current to vibrator motors and to transfer skip that distributes concrete over canal prism.

TRANSFER SKIP within lining machine (below) dumps concrete into slip forms around face of rig. Baffles in forms force concrete into even layer screeded by wide steel shoe as machine advances.

JOINT CUTTER (below) follows lining machine. Three moving carriages inside frame cut transverse joints with spring-mounted vibrating blades. Following joint machine is mastic rig that supplies calking compound to expansion joints.





SCAFFOLD on rear of lining machine carries finishing crew who float and trowel canal pavement. This is one of few manual jobs on huge project.

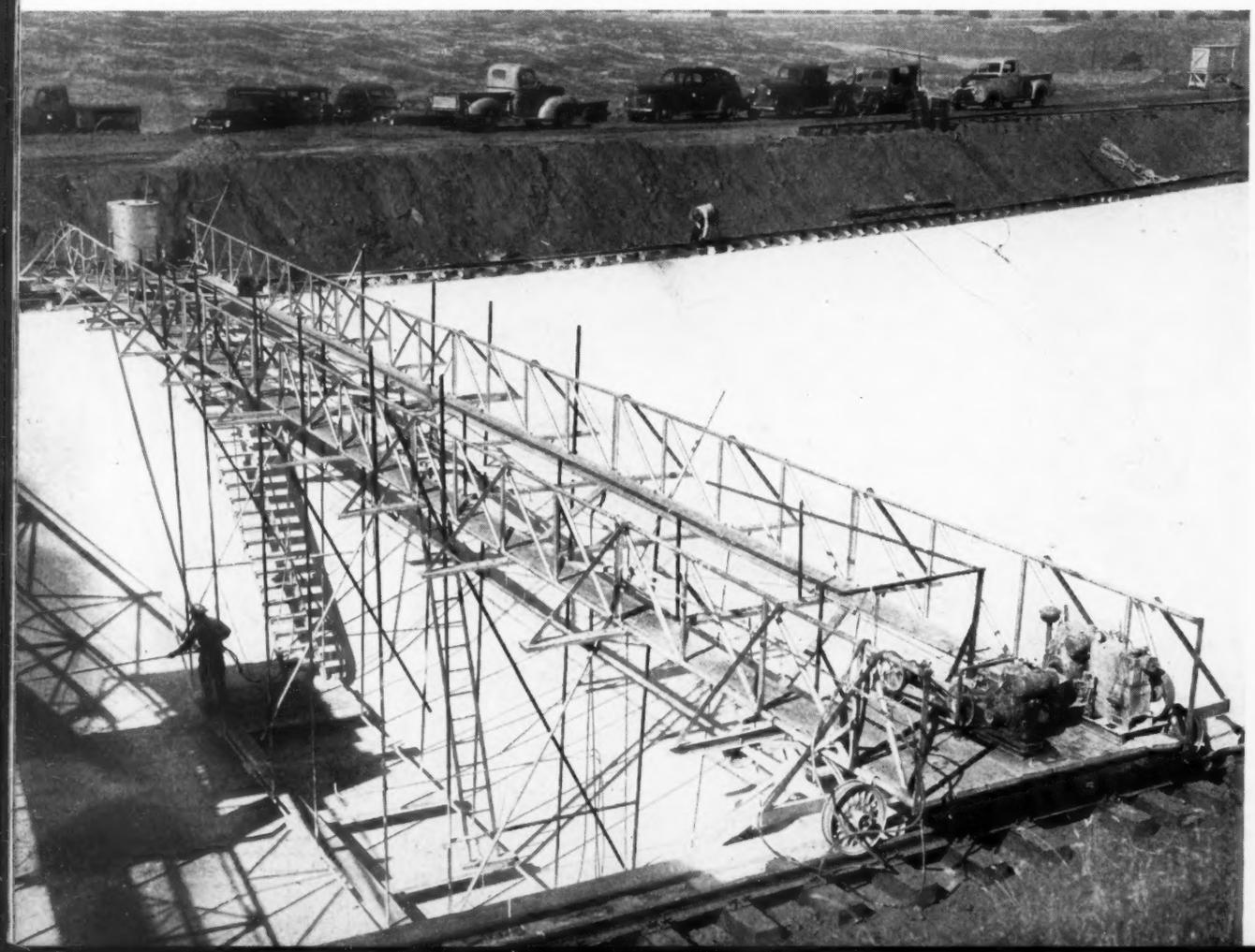
CURING JUMBO (below) powered by Briggs & Stratton gasoline engines brings up rear of parade. White pigmented curing compound seals concrete pavement and helps dissipate its heat, at same time reflecting sun's rays.

grade along either side of the canal. Hydraulic jacks at all truck supports, raise or lower the rigs to adjust the trim depth or the thickness of concrete lining.

The trimmer is a bucket-type excavator with two transverse bucket chains that finegrade canal sides and bottom and discharge spoil on to a series of belt conveyors on the machine for disposal beyond one rim of the ditch. Engines and transmissions from two D7 tractors operate the bucket chains, while belts and traction motors are electrically driven from two Caterpillar diesel-generator sets.

The lining machine—a slip-form rig—places, vibrates and screeds the canal concrete. Concrete from a Koehring highway paver operating along the top of the canal is dumped by the paver (or by crane and bucket when the lining machine is beyond reach of the paver boom) into a hopper car or skip riding transverse rails within the lining machine. The skip may be spotted to dump at any point across the canal section, and the concrete slides down the face of the liner into slip forms. The concrete is vibrated, and then screeded by the machine as it advances over the poured lining.

The 160-mi., $36,000,000 Friant-Kern Canal is a prime feature of the U. S. Bureau of Reclamation's Central Valley project in California, and will carry 4,000 sec.-ft. of water from Friant Dam to the arid southern portion of the San Joaquin Valley. Of the more than $15,000,000 of canal work already let, Peter Kiewit Sons' Co. holds over $6,000,000 in contracts for about 30 mi. of canal.



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AIR TAMPER COMPACTS STEEP CANAL BANKS

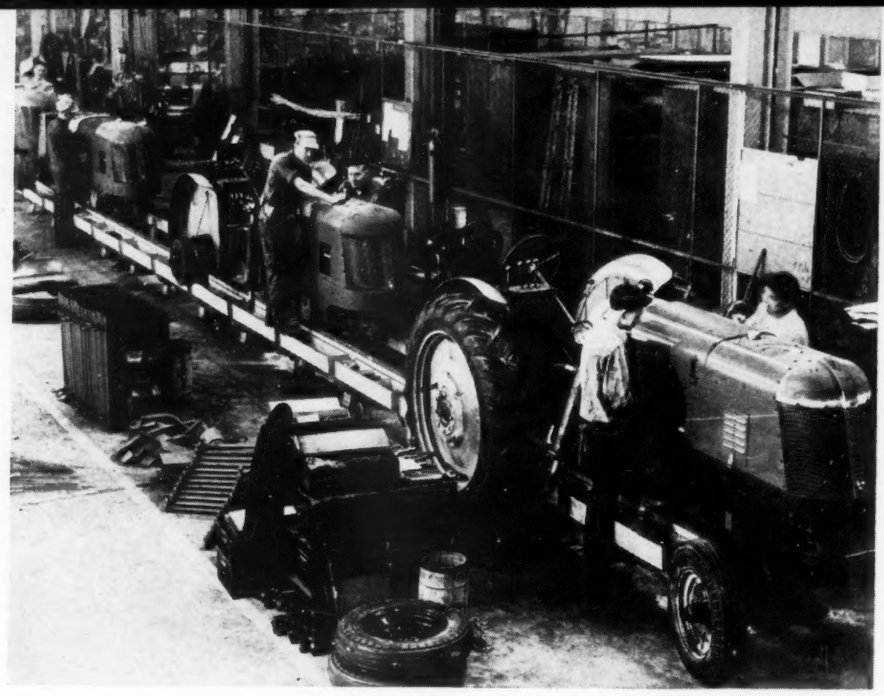
ANOTHER CLEVER RIG on Kiewit's Friant-Kern work is a pneumatic backfill tamper that delivers 10,000-lb. blows to compact steep sideslopes of 1¼ on 1.

Specifications call for cuts in rock to be over-excavated and backfilled with select earth compacted to 90-95 percent of standard laboratory density. For this compaction, K. D. Wasson, the contractor's general superintendent on the job, designed a skid-mounted machine with movable boom along which travels an air-powered ram. A 14x28-in. shoe at the end of the ram tamps the backfill, spread 2 ft. thick, and compacts it to a 1-ft. 2-in. layer.

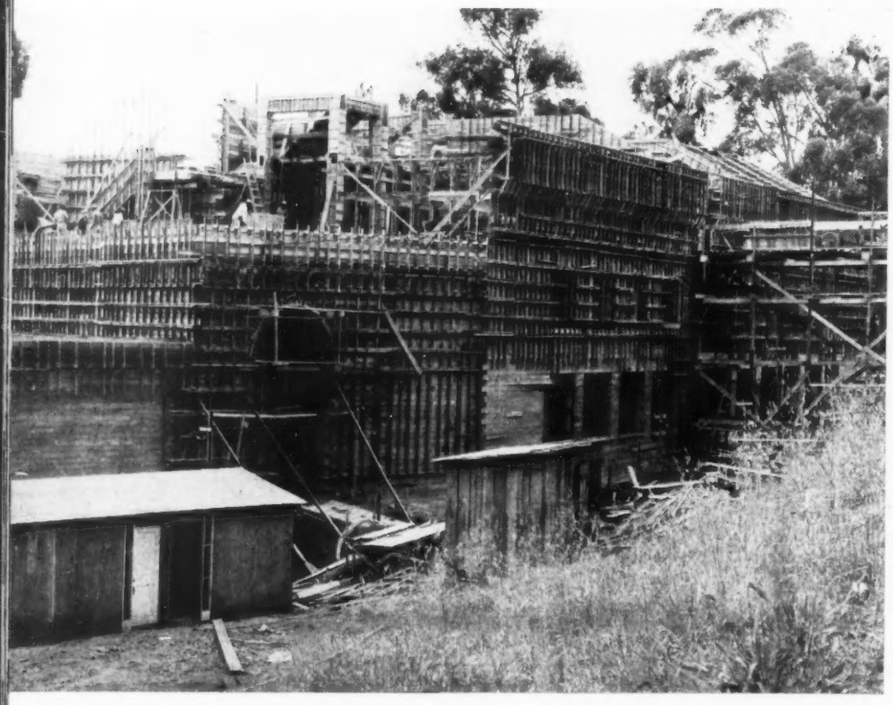
BACKFILL TAMPER compacts 2-ft. dirt layer spread over rock sideslopes on Friant-Kern Canal. Caterpillar D8 pulls compaction rig and trailing Chicago-Pneumatic compressor that supplies air to tamping ram.

KEITH WASSON, general superintendent for Peter Kiewit Sons' Co. on their Friant-Kern work, designed backfill tamper to compact steep canal banks.

PNEUMATIC RAM with No. 1 Amsco shoe moves along boom which is held parallel to 1¼:1 slope. Rig tamps backfill on 300 ft. of canal bank in 7 hr.



ROAD MAINTAINERS roll off assembly line at new Huber Mfg. Co. plant in Marion, Ohio. Huber planned its new 220x400-ft. building for automobile assembly line production of rollers and maintainers.



← UNIVERSITY OF CALIFORNIA has under way $97,000,000 housing and facilities construction program. First building started was four-story Chemistry Building on Berkeley campus, now about 40 percent complete.

ON WAY TO ARGENTINA, 135-ft., 760-hp. towboat (below) begins first lap of trip from Dravo Corp. yards at Pittsburgh. Lashed to bow are two sand and gravel barges, each carrying unassembled barge. Also ordered from Dravo by Argentina, in one of the largest purchases of river transportation equipment ever made in United States by foreign government, are two larger towboats and ten covered cargo barges.

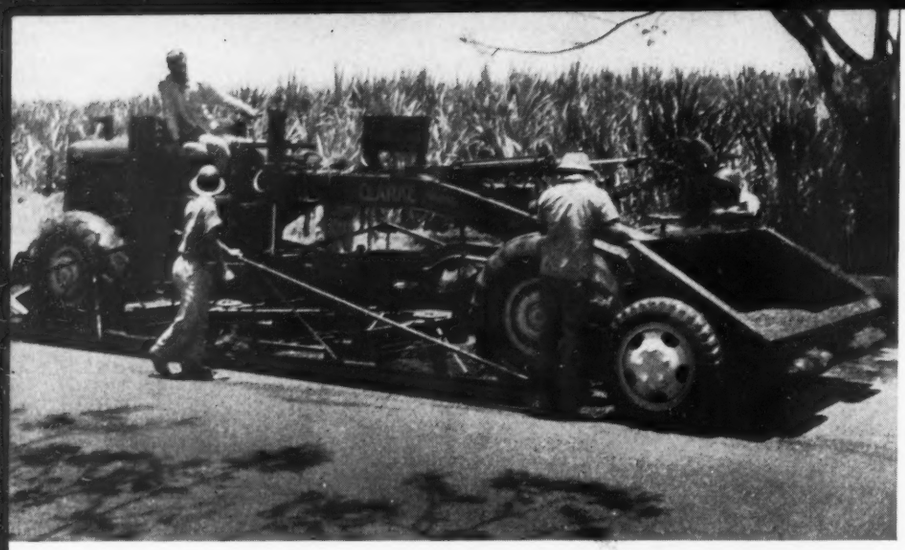
BRITAIN'S LARGEST FLOATING DOCK is towed from India to Malta by Admiralty tugs. Built at cost of $4,500,000, it is 885 ft. long, 172 ft. wide and 75 ft. high and can accommodate ships up to 50,000 tons. It had to be cut in two in order to pass through Suez Canal. British Combine Photo

CONCRETE is poured into pile shells driven by Raymond Concrete Pile Co. for foundation of new diesel engine factory of Caterpillar Tractor Co. at Peoria, Ill. Completion of 1,200x750-ft. building is scheduled for late this year.

MIDWEST BUILDERS are rushing work to ease housing shortage. Typical is this $500,-000 development in Columbus, Ohio, where Westmoor Building Co. is erecting 58 1½-story semi-bungalow brick homes for sale to veterans. Wide World Photo

INTERNATIONAL BRIDGE (below) between Paso de los Libres, Argentina, and Uruguyana, Brazil, is opened by President ENRICO GASPAR DUTRA of Brazil (untying ribbon, at left) and Argentine President JUAN PERON (in uniform, at right). Press Assn. Photo

RAILWAY JUNCTION TRACK (below) one mile long in Prague is completed by 68 Czech soldiers and presented to Housing Association, which plans construction of 320 family houses. British Combine Photo



NEW ROAD LEVELER applies multiple-layer asphalt pavement to Hawaiian road damaged by wartime traffic. Machine's three screeds spread plant mix and also plane road surface. Rig is mounted on Austin-Western grader.

TABLE I—Aggregate Grading for Multiple-Layer Resurfacing

Size of Screen	Percent Passing
¾ in.	100
½ in.	85 to 100
No. 4	50 to 65
No. 8	35 to 50
No. 30	20 to 30
No. 100	10 to 17
No. 200	6 to 10

GRADED AGGREGATE (above) for 1 1/4-in. three-layer leveling course is mixed with 5½ to 7½ percent by weight of 85-100 penetration asphalt. Where multiple-layer surfacing is only ¾ in. thick, maximum aggregate size is cut to ½ in. to prevent peeling of thin layers.

Combined Planer-Spreader Repairs Hawaiian Roads

BADLY DAMAGED by heavy military traffic during the war years, Hawaiian Islands roads are being rehabilitated by a multiple-layer asphaltic concrete coating applied by a new combination road plane and bituminous spreader mounted on a highway patrol grader. Only 2 in. thick, including a ¾-in. wearing course, the resurfacing has resulted in roads with riding qualities equal to those of new highways.

Key to successful repair of a 13-mi. stretch of Waianai Road near Honolulu, was a new type surfacing machine, the Kopp Road Leveler, especially designed for multiple-lift asphalt work. Suspended from the blade circle frame and scarifier arms of an Austin-Western power grader, the machine has two 26-ft. steel skids, one on each side, which give it a long base and which support three sets of V-shaped screeds. The base of the V on front and rear screeds points forward; the middle one back. All screeds are raised or lowered by handwheel, and the entire assembly is adjusted for grade by the hydraulic cylinders that normally control the grader's blade circle. At the front of the rig

DEEP RUTS (below) on Waianai Road repair work require preliminary leveling course of asphaltic concrete dumped by trucks, spread by grader and rolled. On subsequent job Kopp machine did all leveling, filling and placing of multiple-layer course.

THREE-WHEEL ROLLER (below) compacts first rough leveling course and is followed by Kopp leveler that places 1¼-in. three-lift leveling course which will be topped with ¾-in. surfacing.

FOUR-WHEEL DRIVE AND STEER of Austin-Western grader on which leveler is mounted means easy maneuvering when front hopper is loaded with asphaltic concrete.

is a wheeled hopper that functions as an asphalt spreader.

In operation, plant-mixed asphalt is dumped by hauling trucks into the spreader hopper and the mix falls through feeder gates to the roadway ahead of the front screed. As the leveler moves ahead, the first screed spreads the material and forces the excess to the sides where it passes through openings to the middle screed. This in turn spreads the mix and collects the excess at its center where there is another control gate. Extra material moves through the gate to the rear screed which distributes the rest of the mix. There

HAULING TRUCK dumps asphaltic concrete into spreader hopper on front of leveler. Rig requires only two operators: one runs machine, other adjusts screeds. With hopper and skid frame assembly raised hydraulically, leveler travels from job to job at 20 mph.

FINAL PASS of leveling machine (below) leaves unsegregated smooth surface. Multiple-lift treatment eliminate irregularities that appear when necessary thickness is applied in single layer.

TANDEM ROLLER (below) compacts ¾-in. wearing layer applied on multiple-lift leveling course to complete resurfacing job. Opened 6 months ago, first section of repaired road is equal to new, despite traffic of 1,500 vehicles per day, including 20-ton trucks.

is no opening in the rear screed, but with a properly regulated feed, little material piles up.

In addition to spreading the plant mix and filling in low spots in the old pavement, the screeds act as planes to shave off high points. Usually, three passes of the Kopp machine bring the roadway to a true surface. For the first trip, the skids are lowered to establish a fairly uniform gradient, and the screeds are run down all the way. Enough plant mix is added during each pass to build up a new surface which is compacted by a road roller that follows directly behind the leveling machine. After the three-pass or multiple-layer leveling course is thoroughly rolled, a one-layer bituminous plant-mixed wearing course is spread and compacted to ¾ in. to complete the resurfacing.

A special mix (Table 1) was designed to give the workabality required for multiple-layer work. Although unsuited for placement in a single thick layer, the mix has given excellent results where extra compaction is attained from the multiple rolling of the three-pass procedure.

In cost-plus work for Honolulu it is reported that with the Kopp leveler the average city street from two to four lanes wide can be given an average ¾-in. multiple-layer resurfacing for about 50 cents a sq. yd. exclusive of wearing course. With ¾-in. wearing course added, the cost is about 70c. Costs are based on material prices of $2.25 a ton for crushed rock and $45 a ton for asphalt in the mix. Other costs are comparable to those on the mainland.

The resurfacing of Waianai Road was under the supervision of the Territorial Highway Department; B. F. Rush, territorial highway engineer; R. W. Hendry, chief construction engineer; and K. B. Hirashima, testing engineer. Accompanying photographs were taken by Mr. Hirashima. H. H. Philips was general contractor for the work, and the Clarke-Halawa Rock Co., Honolulu, was paving subcontractor.

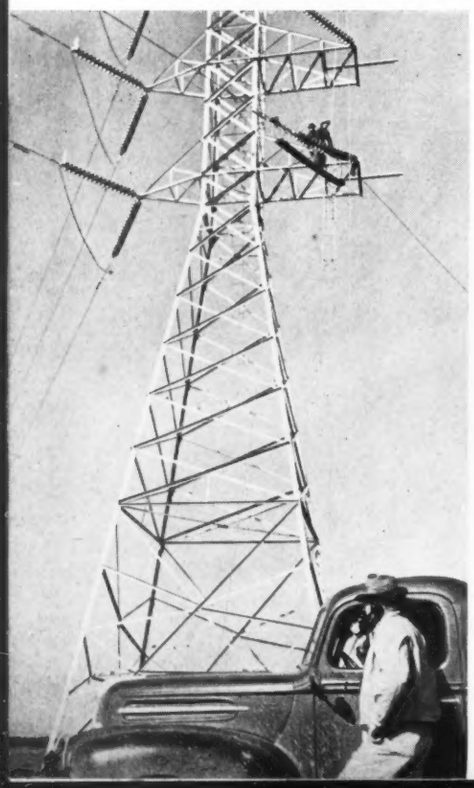
Radio Coordinates Cable-Pulling Job

RADIO COMMUNICATION between widely separated cable-stringing crews and equipment on Pacific Gas & Electric Co.'s high tension transmission line construction means faster work with a smaller gang. Two-way radios in pulling truck and foreman's car allow instant and precise conductor control on pulls as long as 3 mi.

Prior to radio coordination of the job, the heavy electrical conductor cables were strung by hand as the old method of relaying arm signals did not furnish exact enough control for machine pulling. Twelve linemen who moved ahead as the work progressed made the usual 3-mi., 21-tower pull, while three other linemen continually observed the cable for accurate sagging-in.

Under radioed directions from a foreman at an observing point along the line, a truck now pulls the conductor, yet the close coordination required for exact adjustment of the sags is retained. Although three linemen still observe the sagging-in, the twelve formerly on the pull are relieved for other work. In addition, with the truck pulling, the job is done in half the time.

FOREMAN (below) directs line-pulling job over Link two-way 15-watt FM radio with 10-mi. range. Sets are mounted in foreman's car, pulling truck, and in car carrying licensed radio operator and equipment.



TWO-WAY RADIO (below) in truck making 3-mi. cable pull keeps driver in constant touch with distant foreman. Precise control through radio communication lets truck replace 12 of men who formerly did delicate stringing operations.

PIPEMAKER FINDS NEW USES FOR AIR

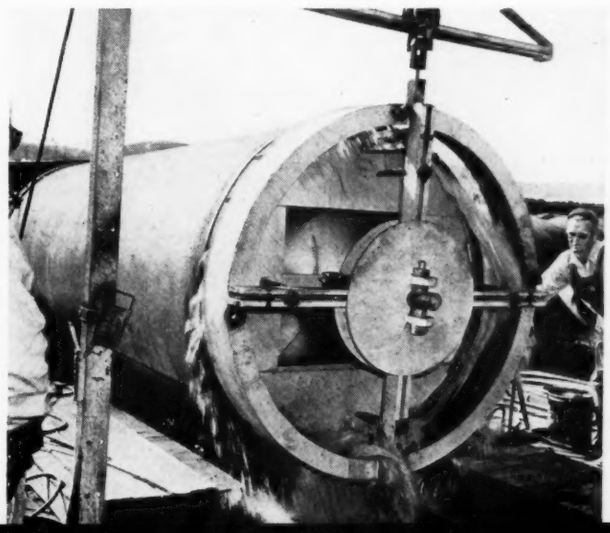
AIR MOTORS operating at 7,000 rpm. turn eccentric weights to vibrate 3/16-in. steel plate forms for reinforced concrete pressure pipe. Pneumatic vibrators bolted and welded to forms produce stronger, smoother pipe than does old rodding method. Note mufflers to reduce exhaust noise.

COMPRESSED AIR is commonplace around construction operations, but the American Pipe and Construction Co. has gone far beyond the ordinary in applying air to concrete pipe making at its El Cajon, Calif., plant. One interesting application is an inflated fire hose that operates a welding jig for closing the seam in steel shell reinforcing units. This and some of the firm's other uses of air are shown in the accompanying illustrations. Applications also include cleaning up, drying welded seams after water tests, agitating bulk cement in silos, and operating mixer gates, testing machines and vibrators.

Air for these multiple uses is supplied at 110 psi. by two 315-cfm. two-stage compressors driven by electric motors, and is piped throughout the manufacturing area where concrete pipe up to 96 in. in dia. and capable of withstanding heads as high as 550 ft. is made.

CLOSING SEAM PRESS holds pipe reinforcing shell (below) while longitudinal joint is welded with automatic machine. Fire hose, inserted inside tubular section of press and inflated by compressed air, acts against finger-like clamps to force pipe against welding back-up bar.

Photos Courtesy Compressed Air & Gas Institute



TESTING MACHINE HEAD (left) opens after pipe reinforcing shell seams are tested under water pressure. Shell is inserted into cylindrical container which is filled with thin film of water so entire pipe need not be filled. Machine's internal 18-in. ram, air-operated at 100 psi., holds heavy head tight during test and pushes it out on completion.

LEGAL ADVENTURES OF TRACTOR CONN

By LESLIE JOBB

By recounting the experiences of Tractor Conn, who symbolizes the average contractor, this series of articles, each based on the decision of an American court and presented in plain, non-legalistic terms, is designed to help construction men avoid costly legal pitfalls.—Editor

The Case of the Disputed Strike

"The said work shall be completed on or before the date hereinafter specified, providing there be be no interference from labor strikes," Tractor Conn's contract provided. On the third payday Conn had no money with which to pay his employees, as the local paper expressed it and the workmen held an impromptu meeting.

"Let's lay off until we get our money," somebody suggested. The proposition was adopted, Conn was not able to complete the work in time, and the owner claimed the specified penalty for delay.

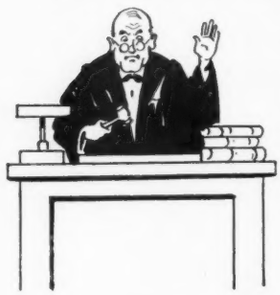
"That clause in the contract about strikes protects me," Tractor Conn argued.

"That does not touch a case like this at all."

"Why not?"

"The word 'strike' as used in the contract means a strike beyond your control and does not refer to a strike brought about by your failure to carry out your agreement to pay your own employees," was the owner's retort. The Supreme Court of Nebraska ruled that the owner was right in the case of McLeod *vs* Genius, 47 N. W. 473.

The Case of the Rejected Evidence



Tractor Conn had completed his contract, but the owner refused to pay. Conn sued in the New York courts, and alleged with the usual "whereases" and "wherefores" that a certain contract had been made, that he had duly completed the same, had demanded the contract price, and that the owner had failed and refused to pay the same or any part thereof.

"The said work was not done in a proper and workmanlike manner," was the gist of the owner's defense and the case came to trial in due course.

"We propose giving evidence to show that the work could not possibly have been done in a workmanlike manner according to the specifications in the contract, for the agreed price," Conn's lawyer suggested.

"You should have thought of that before you signed the contract, and we object to any such evidence being admitted," the owner's lawyer retorted.

And the New York Supreme Court, in a case reported in 4 Hill 168, ruled that the evidence could not be received.

The Case of the Disputed Contract

"Provided, however, that no extra charges whatever shall be made by the said Tractor Conn nor paid by the said owner unless and until there shall be a written order from the said owner stating the price of such extra work," a certain building contract provided.

After Tractor Conn began work various additions were made to the building at the request of the owner, to which of course the contract applied.

When the work was about half done, however, certain alterations were made in the plans which required extra expense. Then the question arose whether the clause in the contract requiring a written order applied to the alterations as well as to the additional work.

This point was important enough to reach the Montana Supreme Court in the case of (Piper *vs* Murray 115 Pac. Reporter 669) where the Court ruled that the clause applied.

More Legal Adventures of Tractor Conn Next Month

PRECAST CONCRETE SLABS DECK RUGGED RAMP

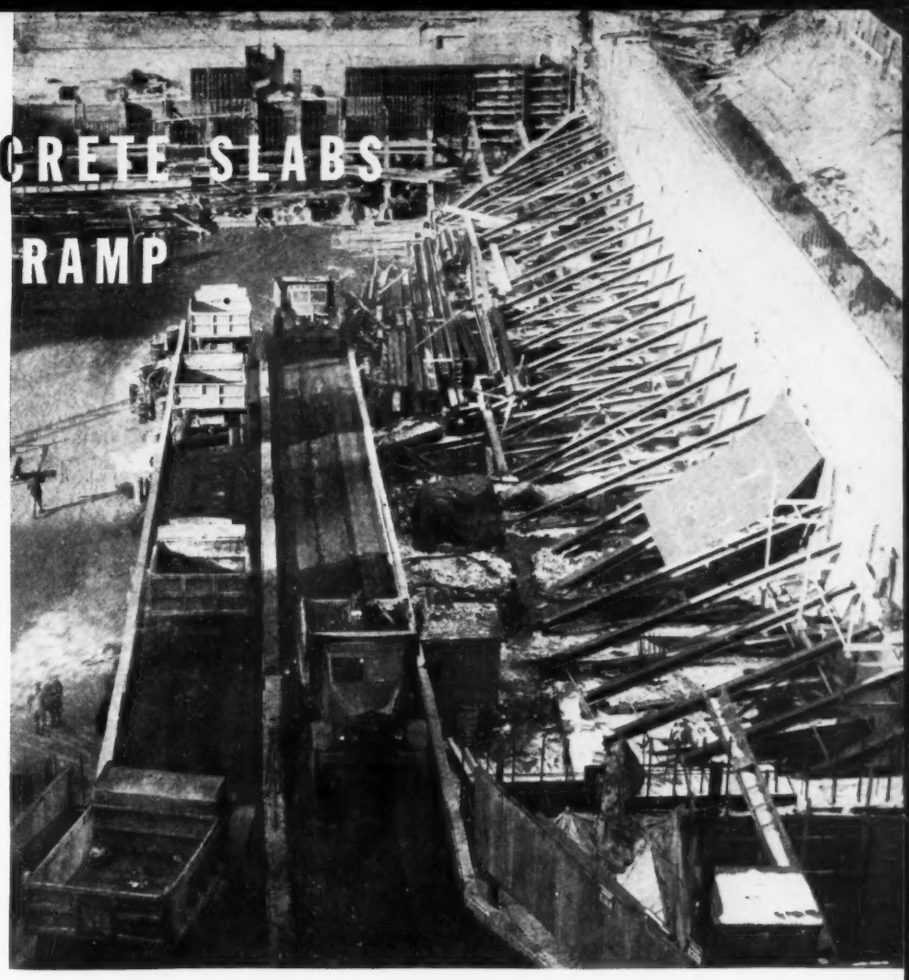
WHEN AN EARTH RAMP leading to the bottom of the foundation cut interfered with basement slab and wall construction on their John Hancock Mutual Life Insurance Co. office building job in Boston, and when timber was unobtainable, Turner Construction Co. erected a steel and precast concrete ramp capable of carrying two fully loaded 6-yd. concrete trucks side by side. Turner estimates that the two-way ramp saved them four to six weeks on the foundation work.

The ramp, 210 ft. long and 23 ft. wide, descends 35 ft. on a 16 2/3-percent grade from the street to the basement mat. Steel frame bents, bolted and grouted to the mat on 12-ft. centers, support the ramp decking, which is four lines of precast concrete slabs 5 2/3 ft. wide by 12 ft. long. Slabs are 5 in. thick with longitudinal edge beams and four transverse ribs, all 15 in. deep and 9 to 10 in. wide, dividing the unit into three sub-panels. Slabs are 4,000-lb. concrete reinforced in both directions by ½-in. rods top and bottom, while 1⅛-in. square bars and ⅞-in. rounds reinforce beams and ribs respectively.

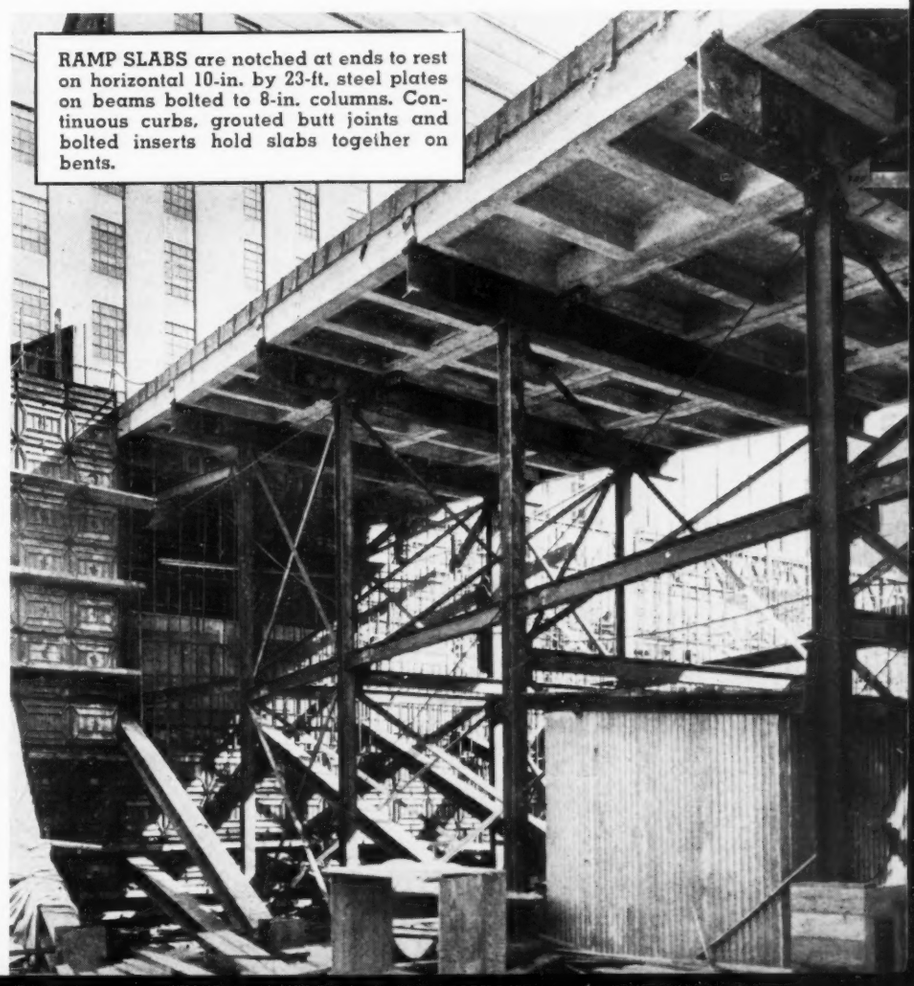
Slabs Bolted to Bents

A crane placed the concrete slabs, which weigh 4 tons, on the erected and cross-braced bents. Bolts through clip angles on 18-in. WF beams, which cap the bents, were threaded into ¾-in. inserts cast in the slabs, after which the 1-in. joints between slabs on adjacent spans were grouted. Reinforced concrete curbs 8 in. square and an 8x12-in. center divider, all poured in place and continuous along the ramp, not only channel traffic but serve as additional ties to hold the structure together.

M. H. Parsons is project manager and R. B. Hazard, superintendent for Turner Construction Co., general contractors for the John Hancock building. Durastone Co., Inc., Saylesville, R. I., precast the ramp slabs for Turner.



PRECAST CONCRETE and steel ramp on 16 2/3-percent grade serves deep foundation. Crawler crane weighing 45 tons walked out of cut over strong ramp shown here carrying six dump trucks. In one two-shift day, trucks hauled 1,700 cu. yd. of concrete and 200 loads of excavation over ramp. Photo from Liberty Mutual Ins. Co.



RAMP SLABS are notched at ends to rest on horizontal 10-in. by 23-ft. steel plates on beams bolted to 8-in. columns. Continuous curbs, grouted butt joints and bolted inserts hold slabs together on bents.

HOW ...they did it

TOW LINES from Hyster logging winches on Caterpillar tractors give bulldozers boost in placing cobble riprap for finishing slopes of 12,000,000-yd. Santa Fe Dam on San Gabriel River above Los Angeles. U. S. Corps of Engineers flood control project is being completed by Guerin Bros., Los Angeles contractor, following war shutdown after most of work had been done by other West Coast firms.

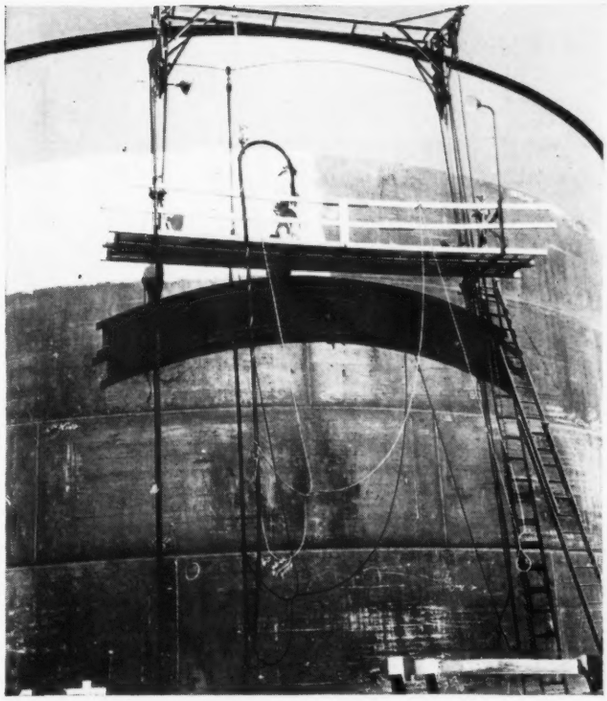
U. S. Engineer Photo

BULLDOZERS GET CHUMMY and prove, by ganging up this way, that two can move more than twice as much dirt as one. McCoy Construction Co., Gainesville, Tex., teams up Bucyrus-Erie equipped International tractors in building small dams in north Texas for temporary water supply to serve oil well test drilling outfits.

TRAVELING MIXER (below) and tower places concrete direct into building forms. Mix is transferred from mixer to top hopper and chute by hoist bucket riding inside sectional tower that can be extended to 65-ft. height. Rig is self-propelled and tower can be tilted 10 deg. to compensate for uneven ground. Four large wheels, which carry most of weight of tower, were fabricated from 20-in. pipe by arc welding. Designed by Ira J. Kuert, first unit was built by Johnson & Thomas Machine Works of Los Angeles.

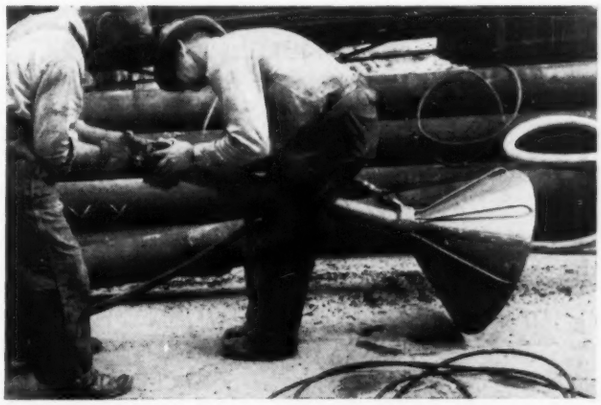
Photo by Hobart Bros. Co.

SIDEWALK SUPERINTENDENTS cheered and breathed joint sigh of relief as this old steam crane reached curb after crawling out of deep hole on new Kresge store job in Erie, Pa. Sessinghaus & Ostergaard, Inc., contractors on job, built husky ramp for crane but didn't quite trust rig's power, so they planted couple of winch trucks at street level to give machine a boost.



SANDBLASTING AND PAINTING 22 welded steel tanks ranging in size from 360,000 to 1,150,000 gal. at large chemical plant was simplified by special traveling scaffold developed by field engineers of Austin Co., Cleveland, designers of plant. Circumferential movement of rig is actuated by hand-operated chain and pulley geared to friction wheels riding on angle flange at top of tank. Working scaffold, which operates either inside or outside of tank, is supported by two triangular frames and cables anchored to steel beam outriggers at top of tank. Vertical movement of platform is by hand-operated winch, with both horizontal and vertical movement controlled from platform.

GRAVITY WATER LINE of cast-iron pipe 20,000 ft. long is installed at Latrobe, Pa. Pipe sections in 18-ft. lengths were moved to place across ravine by rolling each one on small car over track on top of complete sections of pipeline. Photo from Cast Iron Pipe News



FUNNEL-SHAPED INTAKE attached to bottom of air lift assists divers of Superior Diving & Salvage Co., Chicago, in removing silt and other loose material from bottom of shaft and floor of water tunnel for Chicago department of public works. Divers work in tunnel under 60-lb. pressure for 1 hr. at each descent.

ROLLER STRAIGHTEDGE (below) is pushed over new pavement to check surface variations. Built by Virginia Highway Department Division of Tests from Ohio Highway Department designs, it consists of aluminum I-beam mounted on three small rubber-tired wheels. End wheels are spaced 10 ft. apart and rigidly attached to frame, while center roller is free to move up or down. Amount of deviation is shown on exaggerated scale and electric buzzer can be adjusted to warn operator if deviation is greater than tolerance permitted. Device can also be used to check concrete pavement forms. For testing riding qualities of roads already in use, department has Rough - O - Meter (right), based on U. S. Public Roads Administration plans. This trailer-like unit, hitched to rear of highway truck, will detect surface irregularities as small as .02 in.

West Coast Houses

ADOBE BRICK IN CALIFORNIA

CHEFS PROPORTION adobe mix, by eye, adding ingredients to mortar mixer until batch looks right. Recipe calls for dirt and sand in 4 or 5 to 1 ratio, about two pails of oil, enough water for stiff consistency, and a 5- to 8-min. mixing time.

ADOBE BRICK, made water-resistant by the addition of oil to the mix, and greatly improved over the product extensively used for construction in the early days of the Southwest, is returning to help lick building material shortages. To make brick for homes and motor courts, Pete E. Aguilar, California contractor, mixes dirt, sand, oil and water at the building site and casts 4x8x16-in. blocks which are sun-dried for a week before use. Despite crude manufacturing methods (the mix is proportioned by guess and by eye) Aguilar's water-resistant adobe bricks have proved a satisfactory construction material.

WOOD FORM molds three 4 x 8 x 16-in. bricks each weighing 20 to 25 lb. Blocks are cast on building paper, and forms are stripped immediately after filling.

WORKMEN TROWEL BRICKS with hands (below) after sprinkling water on top to make surface smooth. Bricks are baked in sun for 7 days before use, and are covered with paper (right) to prevent too rapid drying and consequent cracking.

ADOBE BRICK HOUSE (below) beats shortage of conventional building materials. Wall 16 in. thick on concrete foundation is laid up of water-resistant adobe brick with ½-in. lime mortar joints. Houses are usually stuccoed, or given three coats of linseed oil paint as exterior protection.

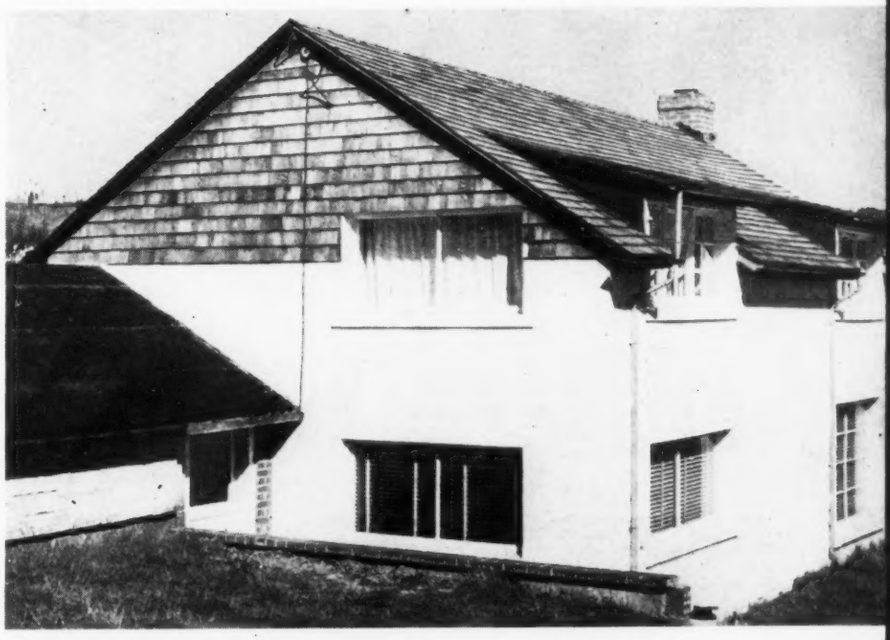
es Get Down to Earth

RAMMED EARTH IN OREGON

WITH CONVENTIONAL MATERIALS hard to get, Jack Williams, Portland, Ore., builder, turned to rammed earth for the construction of houses in the Tualatin valley near his home town. Hand-tamped in forms like those for concrete, 16-in. earthen walls are built up in shallow layers of screened sandy loam containing roughly 25 percent clay, 50 percent fine sand and the balance coarse sand.

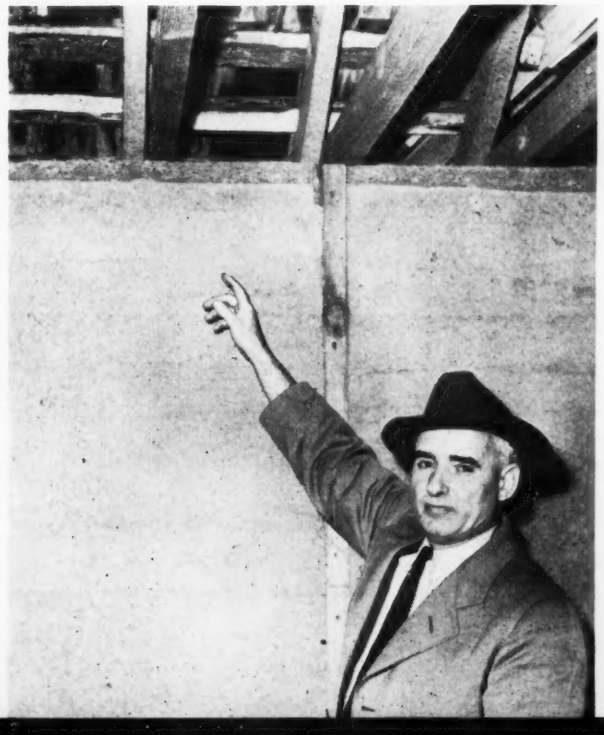
Controlled Moisture

No binder or chemicals are added to the soil. Moisture content is carefully controlled, and organic material sifted out. Under the ramming of 12-lb. tampers, which are either heart shaped, wedge shaped or flat faced, the earth layers set rapidly and forms may be removed almost immediately. Williams built his first rammed earth house in 1937 and its success prompted his latest venture.

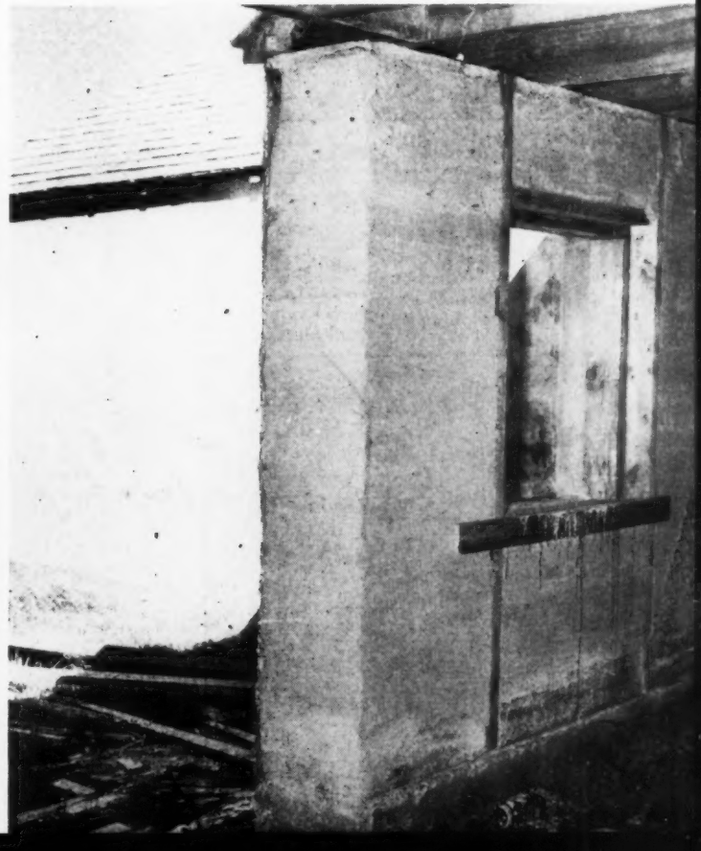


RAMMED EARTH WALLS of house near Portland, Ore., are surfaced with 1-in. cement mortar exterior and plaster interior. Built in 1937, two-bedroom house cost $2,500 to complete. Williams expects his new one-story, 1,400-sq. ft. house to cost $3,000.

JACK WILLIAMS, builder of rammed earth houses, points to 2-in. concrete slab supporting rafters and joists on top of 16-in. earthen wall. Treated 2x4 nailers are embedded in wall during tamping.



CONCRETE FOUNDATION (below) supports 16-in. rammed earth wall. Window sills are concrete; frames are wood. Except for walls, houses are built of conventional materials.



Present and Accounted For...A PAGE OF PERSONALITIES

ELECTED PRESIDENT of Metropolitan Section, American Society of Civil Engineers, is HARRY O. LOCHER, secretary-treasurer, National Association of River and Harbor Contractors. Series of articles by Mr. Locher on "Helps to Successful Contracting" appeared in "Construction Methods" in 1932-34.

THIS SMILING FACE, that of E. B. DEBLER, well known to hundreds of construction men throughout West, will be seen no longer around Bureau of Reclamation projects, for the Bureau recently announced his retirement as director of Region 7 after more than 30 years of service. He has been succeeded by Avery A. Batson, named acting director, but will serve in consulting capacity on water resources problems.

IN CHINA, on loan from U.S. Bureau of Reclamation, ROBERT C. BROWN is serving as technical advisor on program planning staff of UNRRA on Yellow River Project. He has been engineer on Bureau's San Luis project in Colorado.

BUILDING CONTRACTORS DIVISION of Associated General Contractors of America, Inc., is headed by W. L. COUSE (left), of Detroit, Mich., while GAYLE ARMSTRONG (right), of Roswell, N. M., is chairman of Highway Contractors Division.

NEW PRESIDENT of Mountain Pacific Chapter, Associated General Contractors, is PAUL FIORITO, partner, N. Fiorito Co., of Seattle, Wash.

HEADING her own construction company is MRS. EULAH H. ROUSSEAU, 24-year-old blonde, who is building 450 moderately priced homes in Pittsburgh. She is also owner of Hughes Lumber & Supply Co.

ELECTED VICE-PRESIDENT and member of board of directors of Dravo Corp., Pittsburgh, is WALTER P. BERG, who will continue as general manager of corporation's Machinery Division.

You Have The ROCK

We Have The BIT

Get them together and you will have the formula for greatly reduced drilling costs. It doesn't matter what kind of rock it is; there's a Timken Rock Bit to match and master it.

What makes the Timken Bit the superior rock drilling tool it is? (1) a detachable principle that has proved its correctness by more than 14 years service under all rock drilling conditions in mines and construction work. (2) Timken Steel developed especially for Timken Rock Bits and produced in our own steel plant. (3) Timken metallurgical "know how" in heat treatment and hardening. (4) uniform quality and performance; every Timken Bit will give the same outstanding service in speed of penetration and depth drilled when used in the same kind of rock.

No matter where you are there's a Timken Rock Bit distributor within telephone call. Conversion and reconditioning shops also are conveniently located for quick service. Put Timken Bits to work now — cut drilling costs, increase production.

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ROCK BITS

THE TIMKEN ROLLER BEARING COMPANY, CANTON 6, OHIO

JOB oddities

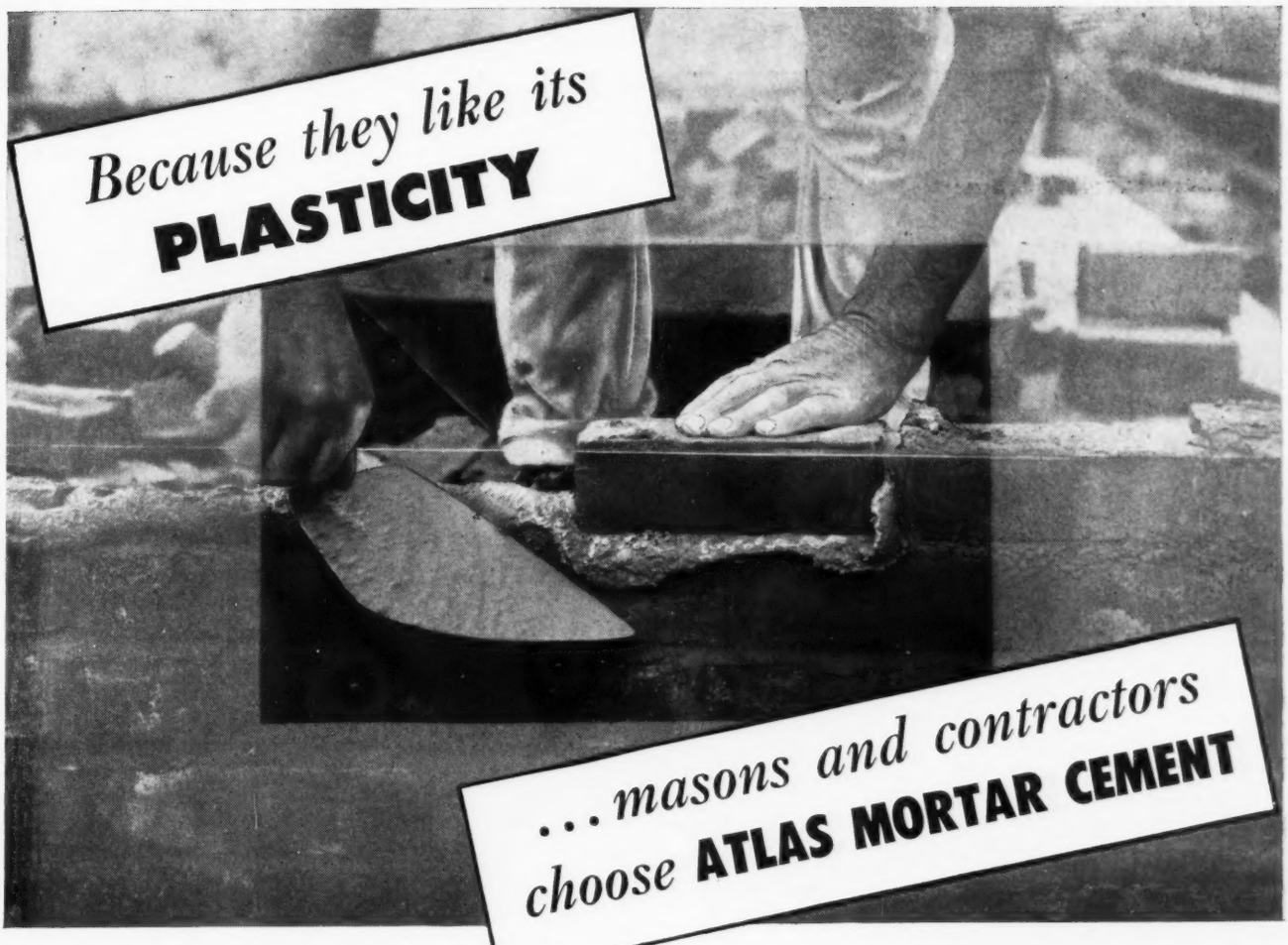
CONCRETE MIXERS go highbrow, all painted up and working in a bank vault. Bill Ream, chief teller of Security-First National Bank, Los Angeles, got idea of using mixers for disengaging wrapped coins from their wrappers. Mixer blades do trick in hurry and jet of air blows papers away as coins are dumped through hopper into sacks. This view shows non-union laborer charging mixer with unorthodox aggregate. This is nothing new to contractors—they have been shoveling money into mixers for years.

ROWBOAT serves as demolition scaffold in wrecking 120-ft. open-top standpipe at Erie, Pa., when city officials declared tank obsolete. Ray Rumball, marine salvage worker, dismantled tower by cutting plates up into sections weighing up to 1 ton each and lowering them to ground by winch truck whose line operated through snatch block on tank rim. Oxygen and acetylene tanks for cutting torches were hung from rim in empty oil drums. Water was lowered in tank as demolition progressed to keep rowboat at convenient working level.

CONTRACTORS will tackle anything, even mining for sulphur in extinct geyser basin near Cody, Wyo. Here (below) F. A. Sheridan Construction Co., of Billings, Mont., starts down after yellow stuff with Gar Wood 15-yd. scraper pulled by Allis-Chalmers HD 10. For first 15 or 20 ft. they'll find sulphur and gypsum mixed, then they expect to find vein of 80 percent pure sulphur 500 to 1,000 ft. thick. They have already made a nice deal with DuPont for product.

ACRES OF DIAMONDS—at least part of an acre—are inspected by AL MOREHEAD (below), regional drill foreman for U.S. Bureau of Reclamation at Boise, Idaho. Collection is part of $10,000 purchase of bortz, or industrial diamonds, which Bureau will use for diamond drill exploration work on Western projects.

ROUND AND ROUND SHE GOES, and where she stops, nobody knows. Caterpillar D-7 tractor (below), hooked to new Caterpillar 70 scraper, cuts neat circle on job near Peoria, Ill.



Experienced masons and bricklayers like the smooth, even way Atlas Mortar Cement responds to each stroke and twist of the trowel. Its high plasticity helps them produce a fast, clean, workmanlike job.

And the yield of Atlas Mortar Cement is especially important to the contractor. The large number of brick, block, tile or other units laid up with the resultant mortar may represent profitable savings, particularly on big jobs.

Atlas Mortar Cement complies with Federal and ASTM specifications for masonry cement. It rates high in all other desirable characteristics — in volume change, water retention, durability, color and strength.

Write for descriptive circular to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

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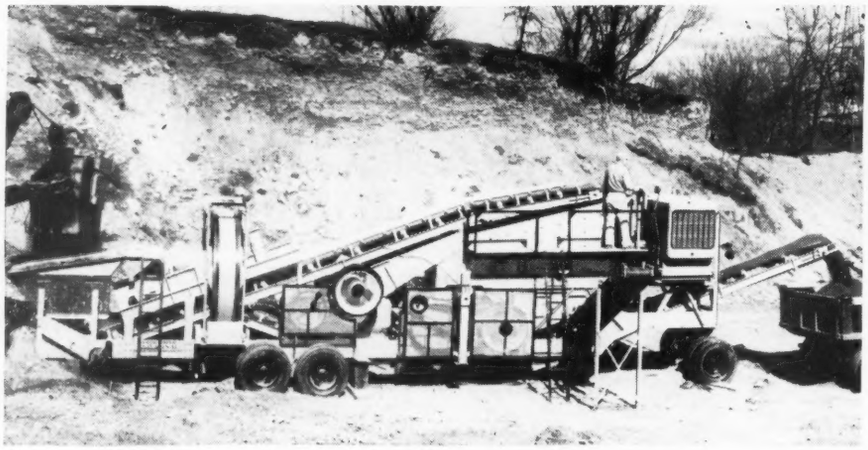
CM-MC-13

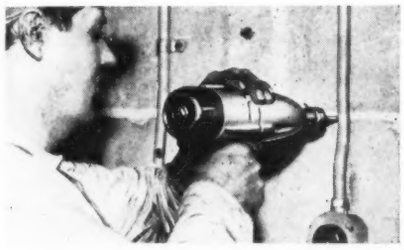
CONSTRUCTION EQUIPMENT NEWS

JULY 1947 REVIEW
of Construction Machinery and Materials



PORTABLE GRAVEL PLANT — New portable crushing, screening and loading plant provides three-stage crushing in single unit. Plant features Twin-Dual roll crusher, which is two-stage secondary crusher consisting of two sets of different diameter rolls mounted on common roll shafts and operating simultaneously. One half its crushing capacity is devoted to first secondary crushing and other half to second or finishing stage. Primary crusher is 10x24-in. roller bearing Streamline jaw crusher and twin secondary is 24-in. roller bearing star gear TwinDual roll crusher. Charging hopper has built-in reciprocating feeder and trap gate with bar grizzly. The 3x10-ft., 3½-deck roller bearing gyrating screen is mounted on incline. Thirty-inch conveyors are used. Gooseneck truck is of 12-in. channel frame construction with 12 pneumatic tires. Without power, unit weighs 47,820 lb. Moving and operating height is 12½ ft. Moving length is 46 ft. overall, width is 8 ft.—**Universal Engineering Corp., Cedar Rapids, Iowa**

ALL-PURPOSE ELECTRIC TOOL—Electric hand tool incorporating entirely new method for increasing power output of such equipment is being put on market by Ingersoll-Rand through its branch offices and distributors. This tool has special cam and spring controlled clutch on shaft which permits four interlocking lugs to disengage and rotate half turn before re-engaging when predetermined torque has developed on shaft. This results in series of sharp impacts in direction of rotation of shaft, thus adding to its turning force. At same time this mechanism acts as safety "fuse" to protect motor from being overheated due to stalling of drill or bit. Until predetermined torque develops on shaft, impact mechanism does not come into

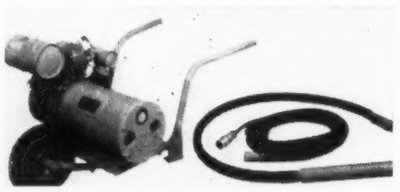


play, but as shaft begins to slow down to point where motor would get hot, impact mechanism acts as release, letting motor continue to rotate at safe speed. New tool is designated as size 4-U. It weighs 6½ lb. and is powered with specially designed reversible 3-amp. electric motor that operates at 110 v. on either a.c. or d.c. current. It has free speed at 2,000 rpm. and delivers 1,900 rotary impacts per minute under load. Using standard attachments, tool can be used to apply or remove nuts, drill, ream, tap, drive and remove screw and studs, drive wood augers, and run wire brushes. Impact mechanism facilitates drilling into brick or masonry. — **Ingersoll-Rand Co., 111 Broadway, New York, N. Y.**

DUMP TRUCK—First pick-up size dump truck with completely automatic hydraulic cab control is designed for multiple uses in short hauls and small bulk handling. It is available either as complete unit with ½-, ¾-, or 1-yd. dump body or as kit for conversion of almost

all standard pick-ups into pick-up dumps. Included in kit are power pack hydraulic pump driven off fan belt, hoist and subframe, hose and connecting parts, parts necessary to convert standard tailgate into double-acting tailgate, and body subframe. Of welded construction, dump body incorporates use of heavy-gage steel for sides, ends and bottom, which is supported by channels and angles.—**National Truck Equipment Co., Waukesha, Wis.**

CONCRETE VIBRATOR—New Hi-Lectric concrete vibrator with electric motor in head has one man operation. There is no flexible shaft, no engine to move. Generator is set off job, out of way with only lightweight power cable connecting it to vibrator. It also has low operating cost and is adaptable to any job. Its



small diameter permits its use in narrow forms, flat slabs, highway pavements and its great power enables it to handle heavier concretes in wide forms and large sections. Complete, self-contained head operating at 9,500 vibrations per min. is only 2⅜-in. dia., yet this vibrator will place more concrete faster than any vibrator of same size, it is asserted.—**Maginniss Power Tool Co., Mansfield, Ohio.**

When the Angle of Incline Makes the Job Tougher—

Use Conveyor Belting of Thermoid Quality!

This 250 ft. Thermoid belt carries the raw material up a 32° incline for an Eastern quarry. Severe roll back condition gives the belting hardest possible wear.

Carrying material from the primary crusher at a 32° angle subjects this 250 ft. belt to extreme roll back conditions. Still, this belt's performance record is high because Thermoid conveyor belting is manufactured of the correct combination of materials to handle the job for which it is intended.

When the Thermoid Trade Mark is on belting, everyone, from top management down, knows that the Purchasing Agent is buying the best that can be had.

Your Thermoid Distributor can give you delivery dates— on the type of Thermoid Conveyor Belting you need.

It's Good Business To Do Business With Thermoid!

The Thermoid Line Includes: Industrial Brake Linings and Friction Products • Transmission Belting • F.H.P. and Multiple V-Belts • Conveyor Belting • Elevator Belting • Wrapped and Molded Hose • Custom Molded Parts.

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Automotive • Industrial
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Thermoid Company, Trenton, N. J., U. S. A.

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PRODUCTS FOR INDUSTRY
BUILT FOR THE JOB
QUALITY PRICE SERVICE

CONCRETE VIBRATION *is Our Meat!*

DAMS MASS CONSTRUCTION

GENERAL CONSTRUCTION

AIRPORTS HIGHWAYS

If you are looking for the best solution to any specific concrete vibration problem, or on the other hand, you simply want the best vibrator your money will buy, see the nearest JACKSON Distributor or drop us a line. Concrete Vibration is our meat!

For over 25 years we have specialized in the development and manufacture of the most efficient and reliable concrete vibrators for each and every type of concrete construction. And the record of JACKSON equipment in the field clearly demonstrates that that goal has been fully attained. The name "JACKSON" on any vibrator is complete assurance of thorough satisfaction.

The FS-7A ELECTRIC
(READY FOR IMMEDIATE DELIVERY)

Ideal on many types of construction. Built around the lightest, yet most powerful motor we have ever used on equipment of this character. Easy to handle or skid. Takes any of our standard heads up to 2⅜" x 18½" with flexible shafting in 24" to 14' lengths. Delivers up to 10,000 V.P.M. on AC or DC 110-120 Volt. Does many jobs formerly done only with larger machines.

Left: The FS-7A with reduction attachment to provide the most desirable shaft speed for wet or dry rubbing or grinding of concrete.

PIPE MANUFACTURE

TUNNELS HARD-TO-GET-AT PLACES

FORM VIBRATING

JACKSON
INTERNAL—EXTERNAL
ELECTRIC-FLEXIBLE SHAFT-HYDRAULIC
Concrete VIBRATORS

ELECTRIC TAMPER & EQUIPMENT CO.
LUDINGTON MICHIGAN

ROAD GRADER GAUGE—Fitted to any standard road grader, this new gauge will fine grade to any desired depth without interfering with other

operations of grader. Easily attached and removed, it can be changed from one width lane to another in a few minutes.—**Road Grader Gauge Corp., Equitable Trust Bldg., Wilmington, Del.**

PLATE STEEL PILING — Caine Corr-Plate steel piling is now being rolled from new high-strength steel alloy. In series of bending, compression and tensile strength tests, piling made of new alloy proved to be 25 percent stronger than same piling made of mild steel. Other tests show new alloy to have double corrosion resistance. — **Caine Steel Co., 1820 North Central Ave., Chicago 39, Ill.**

National
Carbide
FLOODLIGHTS

FOR ALL PURPOSES FOR WHICH FLOOD-LIGHTS ARE REQUIRED

Simple in construction
Economical in Cost
Dependable in Operation
Available in 1500, 8,000 and 16,000 candlepower units.

National Carbide N-200 Light illustrated. Write for literature showing entire line of Floodlights and Lanterns.

NATIONAL CARBIDE CORP.
60 East 42nd St.
New York 17, N. Y.

Oxygen ...FRIEND OR FOE?

(Turbine Oil Oxidation Test)

Without oxygen, man cannot live. Yet, reaction to oxygen may shorten the service life and destroy the value of a lubricant!

Sinclair is ever alert to the importance of knowing exactly how oils will resist oxidation which can form gums and sludge detrimental to equipment performance.

No satisfactory, quick, short time oxidation test methods have yet been developed. Sinclair Research does not compromise. Some studies require continuous tests of 1000 hours. Others, performed with the apparatus above, are run for 100 hours or more.

This test — to assure consumers that breakdown and resultant costly repairs due to oxidation will be at a minimum — constitutes one safeguard against inferior product performance . . . just as all Sinclair Research is your assurance that every Sinclair Industrial Lubricant is the very highest in quality.

Sinclair Automotive Oils

For Bus, Truck and Tractor

OPALINE

TRUCK BUS TRACTOR

OIL

Superior lubrication in the long pull, under heavy loads

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Keeps engines clean . . .
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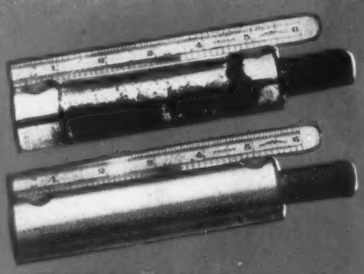
Lubricants for Industry

FINEST CRUDES + EXPERT RESEARCH and MANUFACTURING CONTROL = OUTSTANDING PERFORMANCE

LUBRIPLATE



THWARTS CORROSION!

These originally identical shackle pins from a ten ton truck were used in a comparative lubrication test for a period of one year. A well known conventional lubricant was used on the upper pin. Note the pitting from corrosion, also the excessive wear. LUBRIPLATE was used on the lower pin. Its surface remained bright and true as when the test began, proof that LUBRIPLATE is different . . . better.

LUBRIPLATE

Lubricants definitely reduce friction and wear to a minimum. They lower power costs and prolong the life of equipment to an infinitely greater degree. LUBRIPLATE arrests progressive wear.

LUBRIPLATE

Lubricants protect machine parts against the destructive action of rust and corrosion. This feature alone puts LUBRIPLATE far out in front of conventional lubricants.

LUBRIPLATE

Lubricants are extremely economical for reason that they possess very long life and "stay-put" properties. A little LUBRIPLATE goes a long way.

LUBRIPLATE

FISKE BROTHERS REFINING CO.

NEWARK 5, N. J. TOLEDO 3, OHIO

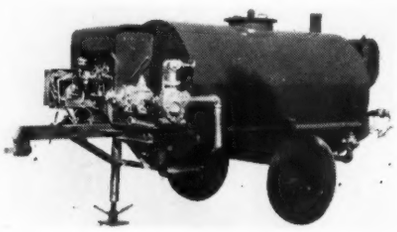
DEALERS FROM COAST TO COAST

CONSULT YOUR CLASSIFIED TELEPHONE BOOK

CONCRETE CONVEYOR — Con-Vay-It 12-20 Concrete Special is said to help pour concrete in about one-fifth the time formerly needed. On large projects these units can be employed in tandem for increased service. Construction features include: Touch textile 12-in. belt impregnated

with 100-percent pure Balta gum; 6-in. take-up; rigid, arc-welded box design frame; adjustable self-scrapers to keep both sides of belt clean; automatic scrapers for head and foot pulleys; 110-v. electric drive with 20 ft. of cable; 20-ft. overall length. Conveyor also handles many other building materials.—**American Conveyor Co., 1115 W. Adams St., Chicago 7, Ill.**

PORTABLE SUPPLY TANK — Designed for use with self-propelled road-mixer, Model 36 (or Models 48 and 54) and other traveling mixing plants is 1,500-gal. single compartment portable supply tank, which is used for carrying all types of binder fluids. Roper pump powered by Chrysler industrial engine is



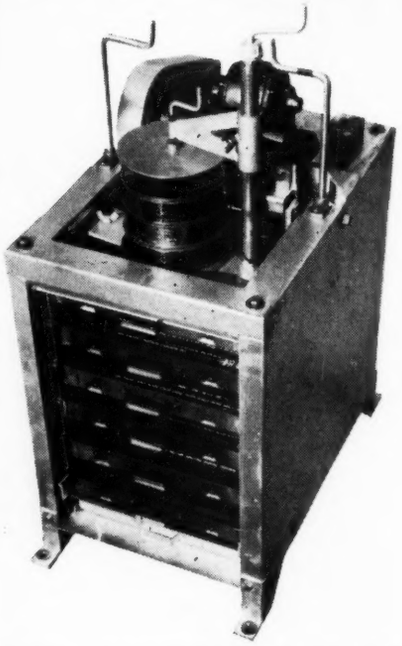
mounted at front and used to load tank, to transfer fluids from tank to mixing drum on roadmixer or travel plant, and to circulate fluids within tank while heating. Tank is available without insulation or heating equipment or with heating equipment only. — **Wood Manufacturing Co., Box 620, 6900 Tujunga Ave., N. Hollywood, Calif.**

CABLE-OPERATED RIPPERS — Production was started of two sizes of cable-operated rippers, No. 28 and No. 18. These rippers are rugged machines designed to do toughest ripper jobs. No. 28 is built for use with one or two D8 tractors; No. 18

(*Continued on page* 122)

GILSON Mechanical Testing Screen

2 to 7 separations simultaneously in 3 to 5 minutes



Fast, accurate sizing of coarse or fines from 4" to 200 mesh

Handles up to 1 cu. ft. of sample. Separation approaches theoretical refusal point. For concrete research, crushed stone, gravel, slag, etc. Sand-testing attachment optional.

8 GILSON FEATURES

1. Makes tests quickly and accurately.
2. Two to seven separations simultaneously.
3. One machine for the entire size range.
4. Screen trays independently removable.
5. Trays adjusted to same tare weight.
6. Visible separation to refusal.
7. Few moving parts to wear out.
8. Engineered for long and practical service.

Write for details

GILSON SCREEN CO.

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Available...

in greater quantity than ever before

. . . *because* more Cummins Dependable Diesels were built in a recent six-months period than in any other like period since Cummins pioneered the first practical high-speed Diesel.

. . . *because* Cummins has expanded floor space 44.8% since the end of the war.

. . . *because* Cummins is now completing a $3,000,000 program of plant expansion and improvement.

But in producing *almost* enough Cummins Diesels to satisfy user demand, the company has not deviated from its basic policy: to build the best Diesel possible . . . to protect each owner's investment with a field organization offering ample service facilities, competent help and sufficient parts no matter where or by whom the engine is sold.

CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA

5 YEARS DEVELOPMENT

ON FIELD TESTS IN EVERY TYPE OF PROSPECTING AND STRIPPING THROUGHOUT THE WORLD.

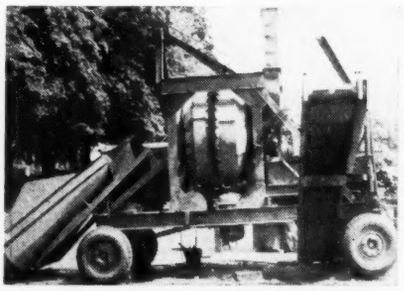
The Parmanco Single Speed Transmission Drill is designed to meet the requirements of the general prospecting field where it is not necessary to drill in solid limestone. Special sliding frame permits drilling and pulling of augers without moving drill. New design of chuck eliminates all hand operation in raising power plant. Recommended for 50 to 60 feet with four and one-half inch equipment. Under favorable conditions it is being used to greater depths.

PARIS MANUFACTURING COMPANY
PARIS, ILLINOIS

(*Continued from page* 120)

for use with single D7 or D8 tractor. Both rippers are equipped with three teeth which are detachable if less than that number are required. Replaceable tips of teeth are of heat-treated alloy. While maximum depth of penetration is 28 in. for No. 18 and 30 in. for No. 28, accurate control permits operator to rip material to any depth up to maximum. Proper tooth angle and weight distribution give penetration on hardest materials. Rippers are operated by rear cable control on tractor.—**Caterpillar Tractor Co., Peoria, Ill.**

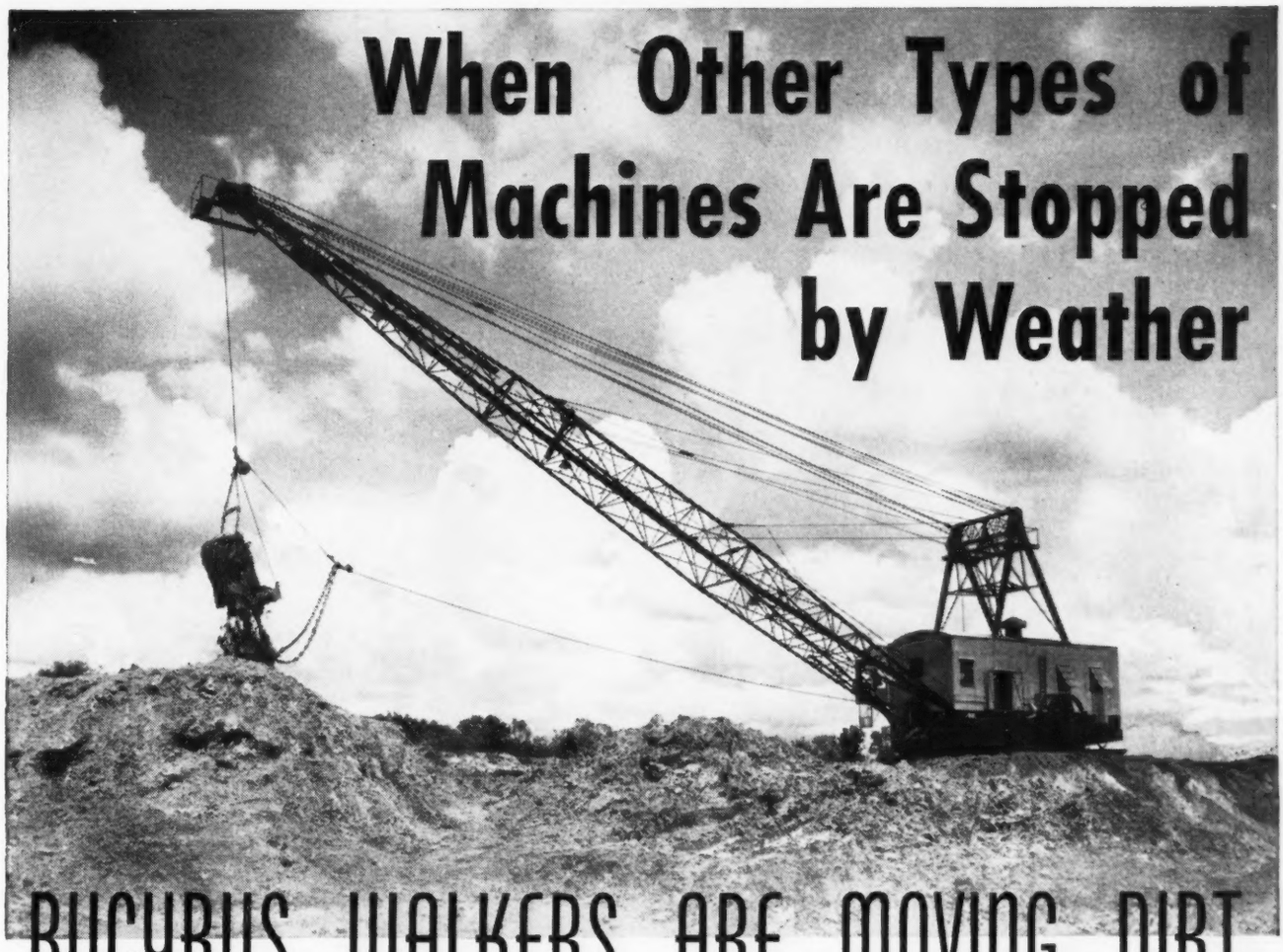
PORTABLE ASPHALT PLANT—Light, inexpensive asphalt mixing plant will be manufactured for newly organized Ford Industries, Inc., by Foote Co., Nunda, N. Y. Same type of twin pug-mill used in most costly plants, assures absolute control and meets require-



ments for most exacting product. It produces 40 to 50 tons per hour of any required density and can be operated by one man. Pug mill gate is air-controlled for instantaneous discharge. Heating drum (rectifier) prepares aggregate for mixing process by raising temperature to desired constant to assure uniformity at all times, regardless of air temperature. Production is maintained by use of an auxiliary drier as weather conditions may demand. Skip feeder and belt conveyor are optional. **—Ford Industries, Inc., 197 W. Dunedin Rd., Columbus 2, Ohio.**

LEVEL AND ANGLE INDICATOR—Usable from all four surfaces with vials visible in any position, Anglevel is equipped with retainers into which two horizontal and two vertical vials

are placed. Retainers can be inserted, adjusted and positively locked into position by 10-32 Allen screw in 3 min. Frame is heat-treated aluminum, 16x3x¾ in., and weighs 1½ lb. **—R-D Co., P.O. Box 912, Flint, Mich.**



When Other Types of Machines Are Stopped by Weather

BUCYRUS WALKERS ARE MOVING DIRT

Let it rain, let footing get soft and muddy, and that's the automatic "quit" signal for most excavators. But with Bucyrus-Erie walking draglines, work goes on as usual under those — and worse—conditions. Their unique stability while digging or moving lets them continue to deliver the big output for which they're famous in the face of such conditions.

For walking, the exclusive rolling cam always produces smooth action, cushioning the machine down, while the large shoes and circular base provide plenty of bearing area to insure safe, sure progress in spite of soft footing. During digging, the machine's center of gravity is always kept within predetermined limits so that rim pressures stay safely low and there's little coning of the ground under the machine. Because the operator knows he can count on Bucyrus-Erie "sure-footedness," he can use all the machine's "years ahead" speed and capacity even when bad weather has halted other units.

BOOMS: 110 to 250 ft.
BUCKETS: 4 cu. yd. to 25 cu. yd.

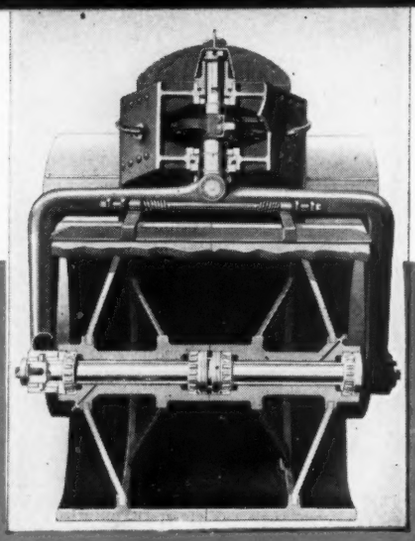
22M47

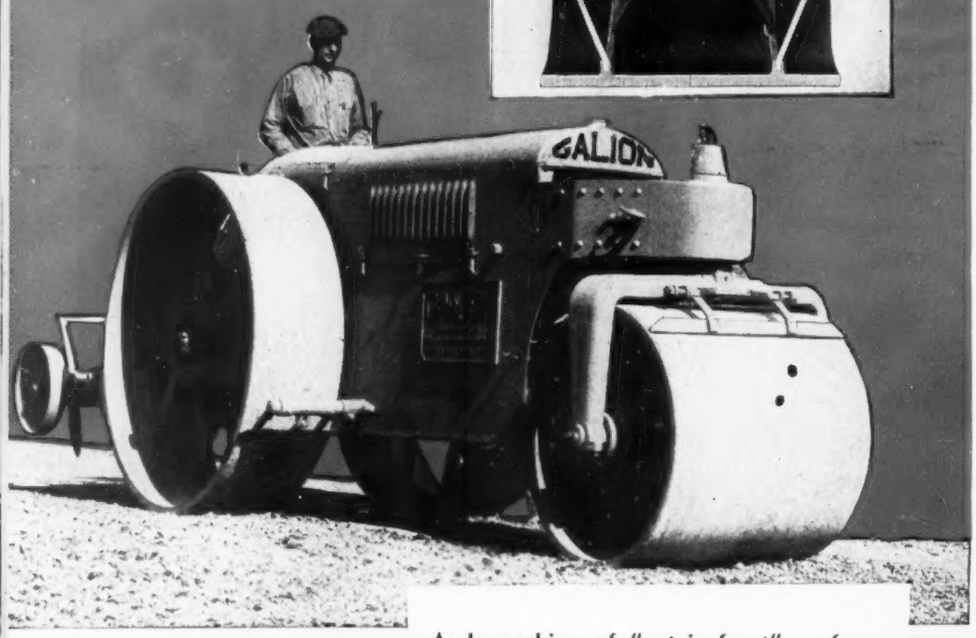
BUCYRUS ERIE

SOUTH MILWAUKEE, WISCONSIN

"OUT IN FRONT"

FOR BETTER JOBS WITH MORE PROFIT

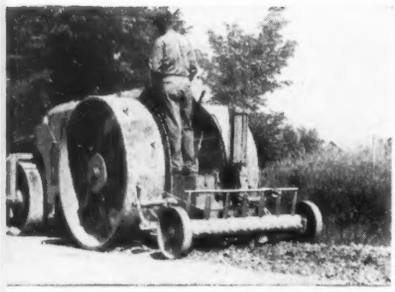




MADE IN 6•7•8•10 and 12 TON SIZES

And speaking of "out-in-front" performance--take a look at the front-end construction of this GALION Three-Wheel Roller, and note these outstanding features that mean ease of handling, economical operation, and long life.

1. Rolls are assembled with only .005 of an inch clearance which is constantly maintained. This "close-fit" retains all the advantages of a single roll while giving the worthwhile advantages of a split roll.
2. Rolls float on four large adjustable tapered Roller Bearings.
3. Mounting of the heavy king pin at top and bottom on Roller Bearings assures easy steering under all road conditions.
4. Yoke is sturdy steel casting heavily reinforced at points of strain.
5. Yoke is connected to heavy forged steel king pin by a swivel joint giving full flexibility.
6. Rolls are made of a special, tough, fine grain cast iron. The heavy steel spokes are securely anchored in rim as it is cast, giving the effect of one-piece construction.



Galion "CHIEF" Equipped With Hydraulic Scarifier.

Complete information given in Catalog 294. Write for your copy and name of nearest Distributor.

GALION IRON WORKS

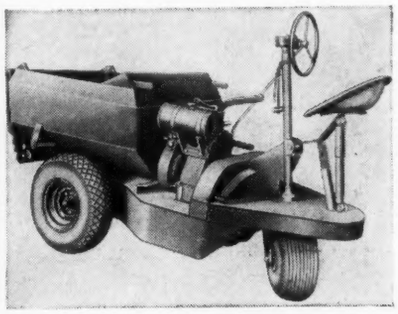
The GALION IRON WORKS & MFG. COMPANY

General and Export Sales Offices

Galion, Ohio, U. S. A.

GRADERS • ROLLERS

MECHANIZED WHEELBARROW— Mechanized wheelbarrow capable of carrying one-ton load at speeds up to 15 mph., called Scootruk, is virtually miniature dump truck. It is built to haul concrete, sand, bricks, etc., and is equipped with special



airplane type tires to run anywhere. It can be used for scaffold or second and third-story work since it weighs only 1,000 lb. Steering is by single tail wheel, permitting easy maneuvering; power is supplied by 6-hp. air-cooled Novo engine with 4-speed transmission and reverse.—**Novo Engine Co., Lansing, Mich.**

CHAIN HOIST — Through ingenious use of steel and aluminum alloys, weight of line of high-speed hand hoists has been reduced to point nearly 45 percent lighter than standard hoists of comparable capacity. This makes hoist far easier and safer to handle and install. Strength and durability have been increased while all excess bulk has been eliminated. —**Chisholm-Moore Hoist Corp., Tonawanda, N. Y.**

ELECTRODES — For direct-current reverse polarity welding only of low alloy cast steel or low alloy high tensile strength rolled steels in all positions, new AP-MO electrode is available in three diameters from 1/8- to 3/16-in. It is designed for making butt and fillet welds in all positions and welds made with it meet requirements of AWS-ASTM tentative specifications for Iron and Steel Arc Welding Electrodes Classification E-7010. Also for rapid and economical welding of mild steel in all positions and with alternating-current or either polarity direct-current, straight preferred, SW-2 electrode is available in four diameters from 3/16- to 5/16-in. Welds made with SW-2 meet requirements of AWS-ASTM specifications for classifica-

(*Continued on page* 126)

Now! LIFE INSURANCE EXPERTS PROVE THAT

FORD TRUCKS LAST *up to* 19.6% LONGER

FOR THE first time in history, the scientific methods used by life insurance companies in computing rates have been put to work in figuring out life-expectancy tables for Ford Trucks.

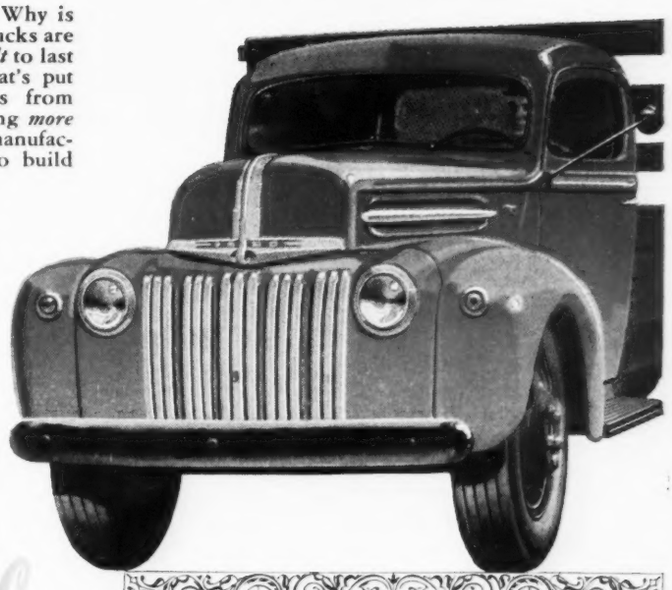
4,967,000 Trucks Studied . . .

Wolfe, Corcoran and Linder, leading New York life insurance actuaries, assembled the records of all trucks of the five sales leaders registered from 1933 through 1941 . . . 4,967,000 trucks in all. Then they prepared *truck* life-expectancy tables in exactly the same way that they prepare *human* life-expectancy tables for life insurance companies.

Ford Trucks On Top!

The result? Ford Trucks Last Longer! Up to 19.6% longer than the other 4 sales leaders! Why is this true? Because Ford Trucks are *built* stronger. They're *built* to last longer! That extra life that's put into Ford Trucks comes from Ford experience in building *more* trucks than any other manufacturer. Ford knows *how* to build trucks that last longer!

See your Ford Dealer today. See the life-expectancy charts. You'll see why it'll pay you to place your order for a Ford . . . the truck that lasts longer!



What Longer Truck Life Means to You . . .

Why It Pays to Wait for a New Ford Truck!

It stands to reason the longer you use a truck, the less it costs to own. That's why longer-lived Ford Trucks are the top truck value. And, logically, Ford longevity means lower maintenance costs . . . less time in the shop. It means more unused miles when you're ready to trade, and a better trade-in. Yes, any way you look at it, you'll get more truck for your money with a Ford Truck . . . because Ford Trucks last longer!

Certified Proof

FORD TRUCKS LAST LONGER!

The life expectancy of a Ford Truck is:

13.1% longer than that of Truck "B"
3.2% longer than that of Truck "C"
7.6% longer than that of Truck "D"
19.6% longer than that of Truck "E"

OFFICIAL ACTUARIAL CERTIFICATE

Based on the application of sound and accepted actuarial methods to the actual experience as measured by truck registrations, we hereby certify that, in our opinion, the accompanying table fairly presents the relative life-expectancy of the trucks involved.

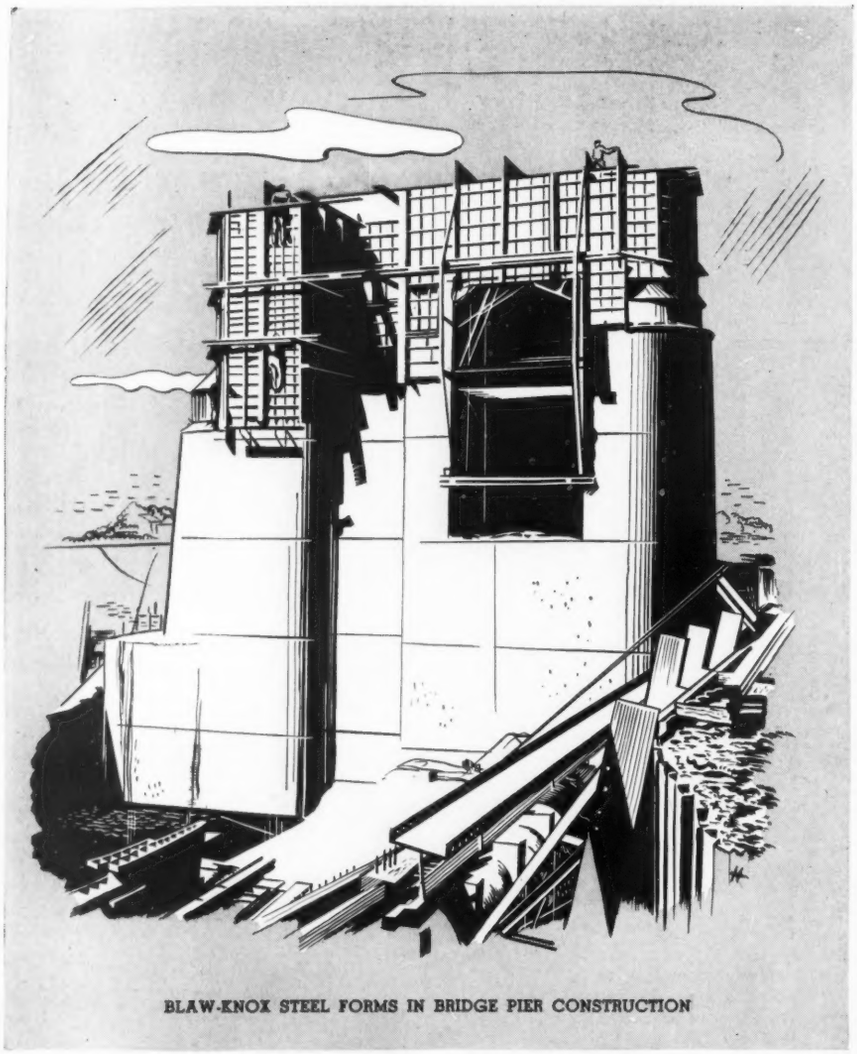
WOLFE, CORCORAN AND LINDER
Life Insurance Actuaries, New York, N. Y.

(*Continued from page* 124)

tions E-6012 and E-6013 and have flat contours, side wall wash-up, freedom from undercutting, and extreme ease of slag removal, which are obtained with Westinghouse DH electrodes (AWS-ASTM classification E-6020 for flat and horizontal work.) — **Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.**

RUBBING BRICK — Handy-handle finishing brick is especially designed and curved for comfortable grip with either hand. Its selected sharp grains make it easy to use. It is

ideal for removing form marks from concrete surfaces, leveling insulating brick, or rounding edges, for special installations. It is also available without handles. Sizes are 2x2x6 in. and 2x2x8 in. — **Clipper Mfg. Co., 2800 Warwick, Kansas City 8, Mo.**



BLAW-KNOX STEEL FORMS IN BRIDGE PIER CONSTRUCTION

The Bigger the Job, the Bigger the Savings

Correct design, rugged construction, assured performance, versatility in meeting specific needs in job after job or in meeting minor changes in section on the same job—these are features that make savings for the contractor who uses Blaw-Knox Steel Forms for general concrete work.

Large or small, these forms mean savings. On the bigger jobs—bridges, tunnels, dams and high or long walls, the savings are bigger in proportion.

SEND for Bulletin No. 2035 for special design suggestions using Blaw-Knox Steel Forms.

BLAW-KNOX DIVISION
OF BLAW-KNOX COMPANY
2086 Farmers Bank Bldg., Pittsburgh 22, Pa.
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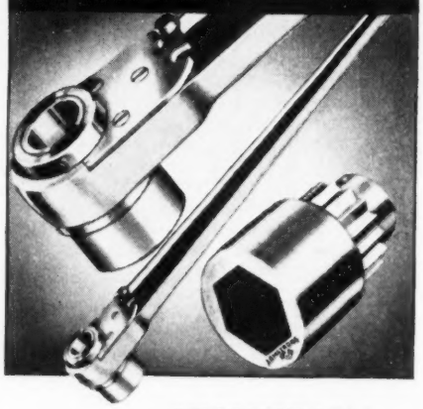
BLAW-KNOX STEEL FORMS

ARMSTRONG
CONSTRUCTION TOOLS



ARMSTRONG
DROP FORGED
CONSTRUCTION RATCHETS

The ARMSTRONG Reversible Ratchet Construction Wrenches are made of steel thruout—the Ratchets are drop forged, the Nut Socket machined from special analysis bar steel. All parts except the handle are hardened. The spindle of the Ratchet is of "wide open" design—permits bolt to pass thru the Ratchet so that nuts can be run any distance along bolt and securely set with one setting. 24" or 36" Ratchets take square or hexagonal sockets for nuts of from 1" to 2 5/16" dia. or 1 5/16" to 3 1/8" dia., respectively.

Write for Catalog

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
345 N. FRANCISCO AVE. CHICAGO, U.S.A.
Eastern Warehouse & Sales: 199 Lafayette St., New York

This picture costs $22,500 . . . should be $900 more

You may never have to handle pulpwood, but this is a splendid example of where false economy might prove costly.

Actually it's the pulpwood handling crane that costs $22,500—not its picture. But this mechanical giant couldn't lift a matchstick without the wire rope sinews that control its operation . . . Ordinary wire rope would cost about $750. For about $900 you could rig with the *best*—Preformed wire rope made of Improved Plow Steel.

When you buy an important machine make certain it comes equipped with Preformed wire rope. More and more machinery manufacturers are standardizing on Preformed for original equipment because it is the best. It's a money-saver because it lasts longer. Operators want it, because it's safer to handle.

WRITE FOR FREE COPY OF HELPFUL BOOK ABOUT PREFORMED

Address: PREFORMED WIRE ROPE INFORMATION BUREAU • 520 N. MICHIGAN AVENUE • CHICAGO 11

Ask your own wire rope manufacturer or distributor

HANDLES EASIER

PREFORMED WIRE ROPE

LASTS LONGER

★ Need information on steel forms, bins, mixing plants, batchers, or other Heltzel products? See a Heltzel distributor. There's one near you. He can give you fast, complete service on your requirements.

If you prefer, mail the coupon direct to us. We will send you *by return mail,* descriptive engineering bulletins on products in which you are interested *plus* the name of the Heltzel distributor nearest you.

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Heltzel Steel Form & Iron Company, Warren, Ohio

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Name_____

Address_____

City_____ State_____

(Type of construction usually engaged in)

CONCENTRATED *Engineering* **IN CONCRETE CONSTRUCTION EQUIPMENT**

Heltzel
BUILDS IT BETTER

- BINS, Portable and Stationary
- CEMENT BINS, Portable and Stationary
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- BATCHERS (for batch trucks or truck mixers with automatic dial or beam scale)
- BITUMINOUS PAVING FORMS
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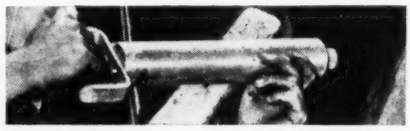
- CURB FORMS
- CURB AND GUTTER FORMS
- SIDEWALK FORMS
- SEWER AND TUNNEL FORMS
- CONCRETE BUCKETS
- SUBGRADE TESTERS
- SUBGRADE PLANERS
- TOOL BOXES
- FINISHING TOOLS FOR CONCRETE ROADS

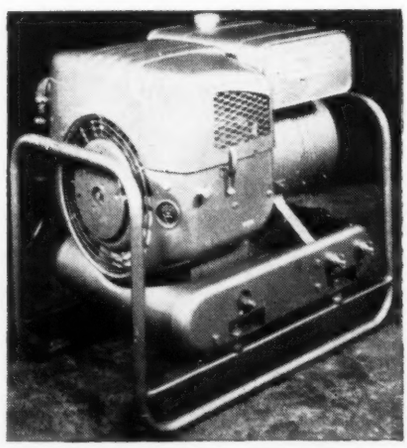
HELTZEL STEEL FORM & IRON CO. WARREN, OHIO · U. S. A.

POWER TOOL — New industrial powder-powered tool named "Drive-it" instantly drives anchor studs as much as 3 in. into average concrete, punches holes through steel plate up to ⅜ in. in thickness and rivets together two steel plates totaling as much as ¾ in. in thickness. Model 38, weighing only 7 lb., delivers 20-ton blow. This power is derived from charge of powder incased in



small cartridge. Special recoil mechanism absorbs all shock. Anchor studs driven into ordinary concrete by this tool will withstand direct pull from 2,000 to 4,000 lb., depending on quality of concrete, and will withstand pull in excess of 5,000 lb. when driven into steel plate. Tool is said to have wide usage among building contractors, particularly for fastening wood sleepers to concrete floors, inserting threaded studs into ceilings for hanging pipes or conduits; and hanging brackets to concrete masonry walls or to steel structural members.—**Powder Power Tool Corp., 618 North Vancouver Ave., Portland, Ore.**

GAS-DRIVEN DC WELDER — New portable gas-driven d.c. arc welder weighs 315 lb. and is of compact construction. Sureweld is portable on as well as to job. Welder, 32 in. long, 26 in. wide, and standing 28 in. high (without wheels), fits easily into back of a jeep, station wagon,



or even trunk compartment of some cars, and can be lifted by two men. Generator is four-pole, self-excited type with interpoles. Welder is rated at 150 amp. at 30 v. on 50-percent duty cycle. It has four-cycle two-cylinder, opposed design. Electrodes up to and including 5/32 in. and certain types of 3/16 in. may be used with welder. — **Hollup Corp., division of National Cylinder Gas Co., 205 W. Wacker Drive, Chicago, Ill.**

STANDARD ENGINEERS NOTEBOOK

CALOL RPM

Inhibitor prevents foaming of gear lubricant

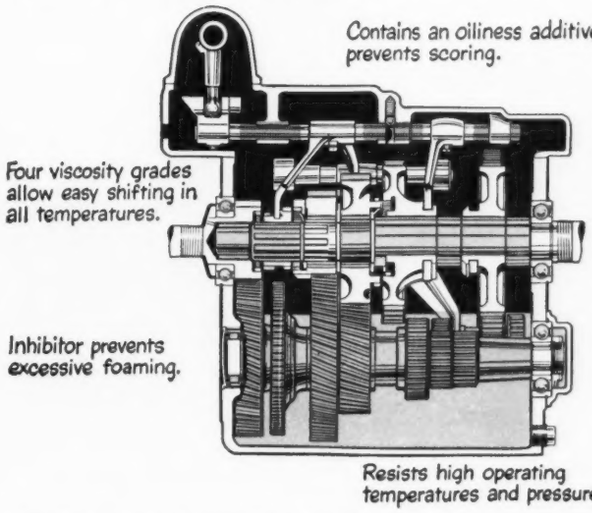
The foaming and expansion of lubricant in transmission and conventional differentials has been eliminated for many operators by the use of RPM Gear Lubricant (Compounded). It contains a highly effective foam inhibitor which prevents retention of air in the lubricant.

Other compounds in RPM Gear Lubricant help it resist high operating temperatures and pressures, dissipate heat rapidly and keep a tough lubricating film on gear teeth at all times.

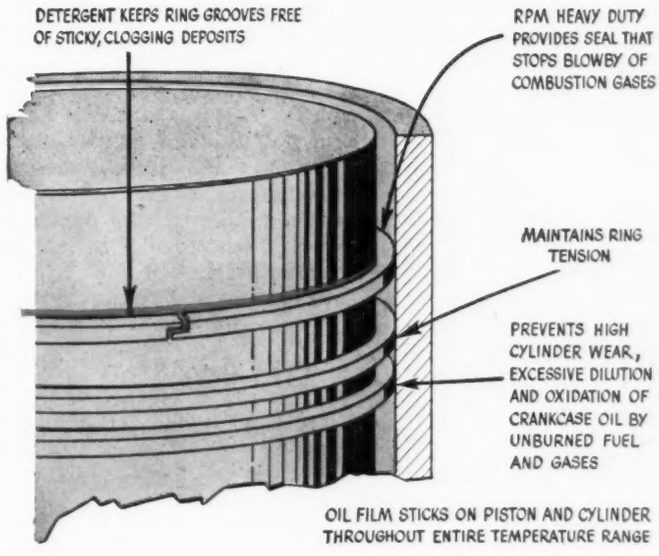
RPM Gear Lubricant (Compounded) will not form deposits in gear cases and is non-corrosive.

It comes in four grades: SAE 80, 90, 140, 250 and is recommended for all automotive transmissions and all differentials (except hypoids) where compounded gear lubricant is specified. (RPM Multi-Service Gear Lubricant should be used in hypoid differentials.)

RPM Gear Lubricant (Compounded) is recommended for most enclosed gears except hypoids.


Contains an oiliness additive - prevents scoring.
Four viscosity grades allow easy shifting in all temperatures.
Inhibitor prevents excessive foaming.
Resists high operating temperatures and pressures.

This drawing prepared with cooperation of Michigan Power Shovel Co.


DETERGENT KEEPS RING GROOVES FREE OF STICKY, CLOGGING DEPOSITS
RPM HEAVY DUTY PROVIDES SEAL THAT STOPS BLOWBY OF COMBUSTION GASES
MAINTAINS RING TENSION
PREVENTS HIGH CYLINDER WEAR, EXCESSIVE DILUTION AND OXIDATION OF CRANKCASE OIL BY UNBURNED FUEL AND GASES
OIL FILM STICKS ON PISTON AND CYLINDER THROUGHOUT ENTIRE TEMPERATURE RANGE

Heavy-duty motor oil reduces cylinder wear

Many operators have eliminated stuck rings, blow-by and excessive cylinder wear by using RPM Heavy Duty Motor Oil.

This special heavy duty oil contains patented additives which remove sticky gum, carbon and lacquer from rings and ring grooves, keeping rings free so they can expand fully. With rings expanded, the tough lubricant film of RPM Heavy Duty Motor Oil forms a seal between rings and cylinder which prevents the force of combustion from driving gases and fuels down the walls.

RPM Heavy Duty Motor Oil sticks to metal at all operating temperatures. This assures unsurpassed lubrication at all times on surfaces of cylinders, pistons and rings, reducing wear to a minimum.

RPM Heavy Duty Motor Oil will resist sludge formation even in coldest operations, will not foam or corrode bearing metals.

Trademarks, "Calol," "RPM," Reg. U. S. Pat. Off.

For additional information and the name of your nearest Distributor, write Standard of California, 225 Bush Street, San Francisco 20, Calif.; The California Oil Company, 30 Rockefeller Plaza, New York 20, N. Y.; The California Company, 17th and Stout Streets, Denver 1, Colo.; Standard Oil Company of Texas, El Paso, Texas.

FOR EVERY NEED A STANDARD OF CALIFORNIA JOB-PROVED PRODUCT

Resistance to both operational and external abuse

REPUBLIC RUBBER HOSE

WORKING CONDITIONS for hose on construction projects repeatedly subject the hose to abuses such as dragging over sharp, abrasive rocks, hot oil from compressors, high pressures with intermittent strains on the reinforcing body. Republic Hose has long been classed as top equipment among contractors, because of consistently proved ability to withstand the severest of these abuses. This superior service doesn't just happen. Republic technologists—through years of specialization in industrial rubber requirements—have developed advanced principles of hose design for each class of service. An extra margin of strength and resistance to both operational and external punishment has been provided in each type and grade of Republic Hose. Call your Republic Distributor on your next requirements.

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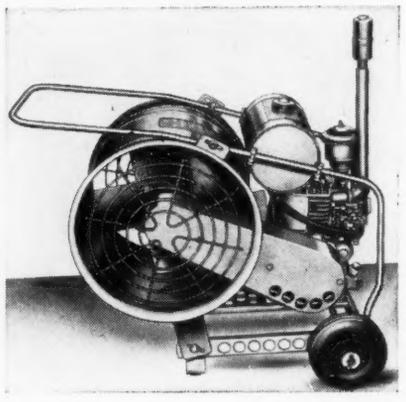
REPUBLIC INDUSTRIAL PRODUCTS
YOUNGSTOWN, O.

LEE DELUXE TIRES AND TUBES
CONSHOHOCKEN, PA.

TRACTOR LOADER — Model HF ¾-yard shovel has many new innovations and exclusive features. Unique 4-speed fully reversible transmission provides practical forward digging speeds plus high reverse maneuvering speeds. Single lever shifts gears into desired speed

range. Bucket is raised, lowered, dumped and relatched by hydraulic power, controlled by single lever. Bucket may be dumped completely or gradually at any height. Full bucket capacity is assured and spillage of loose materials prevented by means of automatic bucket tip-back. Bulldozer blade, crane hook, cab and snow bucket are also available.—**The Frank G. Hough Co., Libertyville, Ill.**

PORTABLE VENTILATOR — High-capacity, light-weight, portable ventilator has high-capacity fan powered by either gasoline engine or electric motor, mounted on lightweight metal frame equipped with two rubber-tired wheels. Standard equipment



includes one 14-in. x 16-ft. length extensible canvas duct for conveying air to desired point. Two-way air flow permits drawing smoke, dust or gases from area or supplying fresh, cooling air to spot desired. Duct is specially treated for flame and moisture resistance. Maximum air delivery without duct is 4,500 cfm, and with duct, 4,000 cfm.—**The Herman Nelson Corp., Moline, Ill.**

Again GM Diesel power pays off

A 3-cylinder series 71 General Motors Diesel was installed in this Northwest pull-shovel which formerly was powered by a gasoline engine. Right off the bat it got one of the toughest jobs on the list—*6 miles of sewer, 8 to 17 feet deep through solid clay and frozen ground.*

It was a good chance to size up what the new engine could do.

It really walked away with the job—finished it well within the schedule—and cut fuel cost from a $7.00 a day average to $1.80.

Even with all its husky horsepower, a GM Diesel is compact enough to fit installations like this. That's because it's 2-cycle with power at every downstroke. It's all work and no play for pistons in this Diesel.

At the same time GM Diesels are simpler in design and easier to service. They make any machine a better machine—sturdy, dependable, economical. So whatever equipment you buy, specify a GM Diesel.

FEATURES OF THE GM DIESEL

QUICK TO START—
on its own fuel

ECONOMICAL—
runs on low cost fuel

EASY TO MAINTAIN—
clean design plus accessibility

COMPACT—
easily installed or moved

SMOOTH IN OPERATION

QUICK ACCELERATION

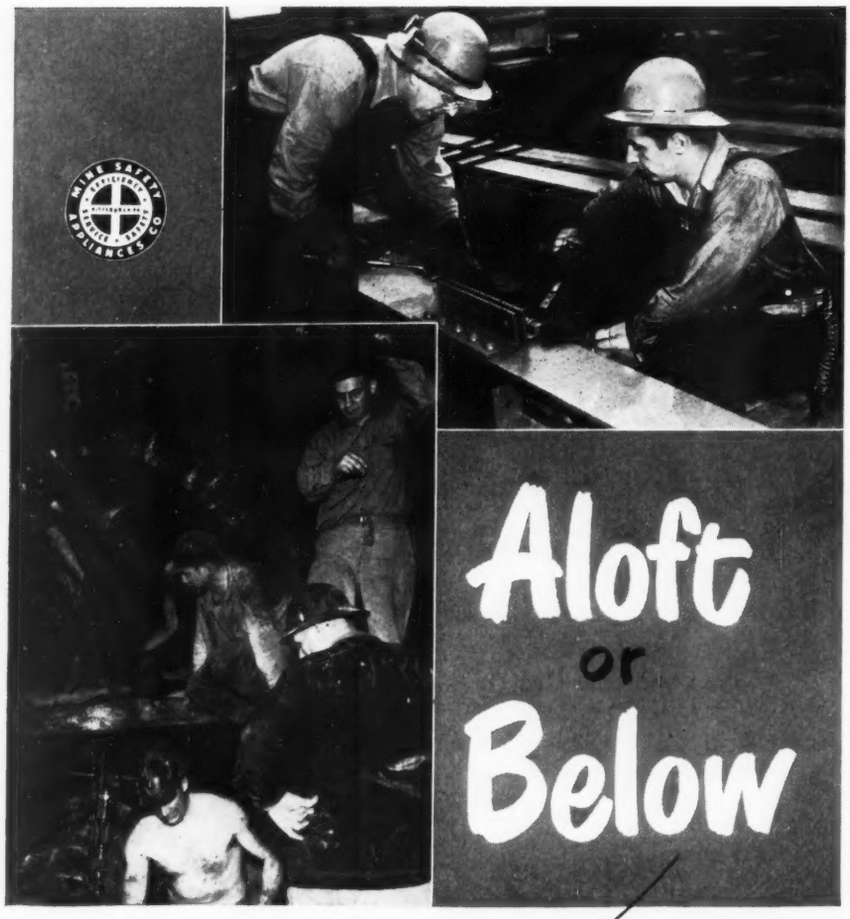
DETROIT DIESEL ENGINE DIVISION

DETROIT 23, MICH. ● { SINGLE ENGINES . . *Up to 200 H.P.* / MULTIPLE UNITS . . *Up to 800 H.P.*

GENERAL MOTORS

GM GENERAL MOTORS DIESEL POWER

DIESEL BRAWN WITHOUT THE BULK



it's M·S·A

SKULLGARDS

for better Head Safety!

On *every* construction job where the danger of falling objects, obstructions or confined spaces expose heads to injury, M.S.A. Skullgards provide proved, dependable protection!

Used by the hundreds of thousands throughout the construction industry, these favorite work hats interpose the high fracture-resistant strength of high-pressure molded, laminated bakelite between danger and the worker's head—correctly designed with high crown for ample head clearance; shock-absorbing inner head cradle; flexible long-wearing sweatband; self-ventilation coolness.

M.S.A. Skullgards are non-deteriorating from exposure to water, perspiration, grease, or common chemicals, have a high dielectric strength, and are available in all standard or adjustable hat sizes. Write for details on these light-weight, easy to wear work hats—ask for Bulletin DK-13.

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Braddock, Thomas and Meade Streets • Pittsburgh 8, Pa.
District Representatives in Principal Cities
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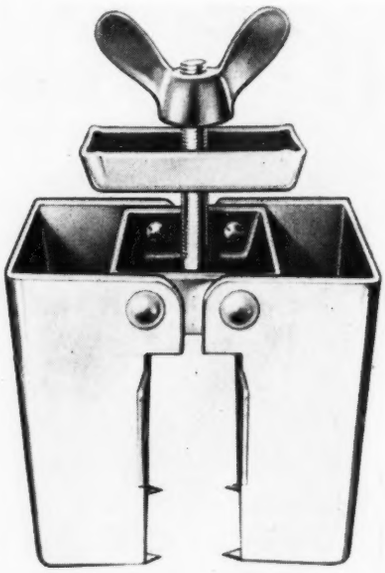
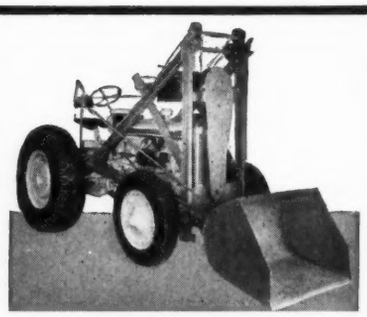
SCAFFOLD BRACKET — Quick, economical method of making safe, strong scaffolds for all types of building construction is provided by Du-All 12-gage steel type brackets,



which eliminate use of bolts and nails. Scaffolds of any height can be easily made in 3 min. Pointed lugs in brackets, which weigh approximately 11 lb. per pair, prevent slipping and make scaffolding stable. — **Du-All Scaffold Bracket Co., Columbus, Ohio.**



FRONT END LOADERS
for Industrial Tractors
Extensible Booms—8' Lift
½ and ⅝ cu. yd. Capacity

Other Products
CONCRETE VIBRATORS
Gasoline Engine and Electric Motor Driven Models
HEATING KETTLES
for Asphalt and Tar
AGGREGATE DRYERS
for Stone and Sand
ASPHALT PLANTS
Portable — Stationary
WRITE FOR CIRCULARS

White Mfg. Co.
ELKHART INDIANA

For most efficient—and most economical—reinforcement...

specify American Welded Wire Fabric

● Efficient, because closely spaced steel members impart distributed strength to all parts of the concrete slab. That means crack control, resistance to stresses and strains in all directions.

Economical, because U·S·S American Welded Wire Fabric is a prefabricated, electrically-welded product, delivered in sheets and rolls. It does not have to be assembled on the job. It can be laid flat or shaped to the forms, stays in place when concrete is poured. It can be used on all types of concrete jobs, large and small. That means that you effect important savings in labor cost and in construction time.

American Steel & Wire Company
Cleveland, Chicago and New York
Columbia Steel Company, San Francisco, Pacific Coast Distributors
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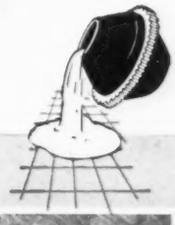
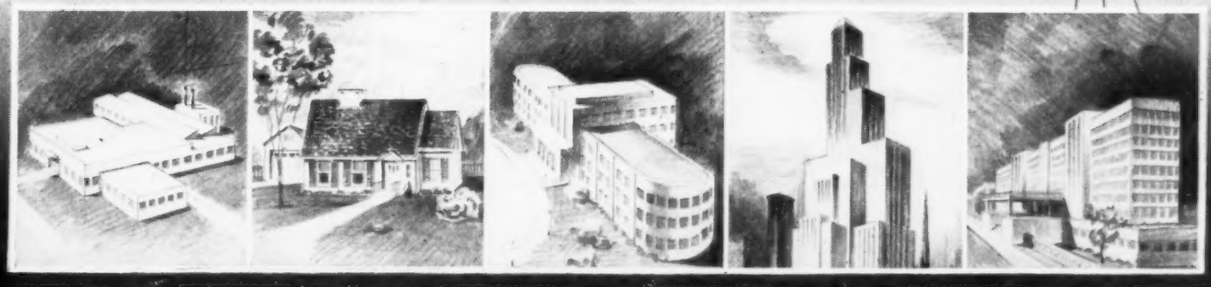
UNITED STATES STEEL

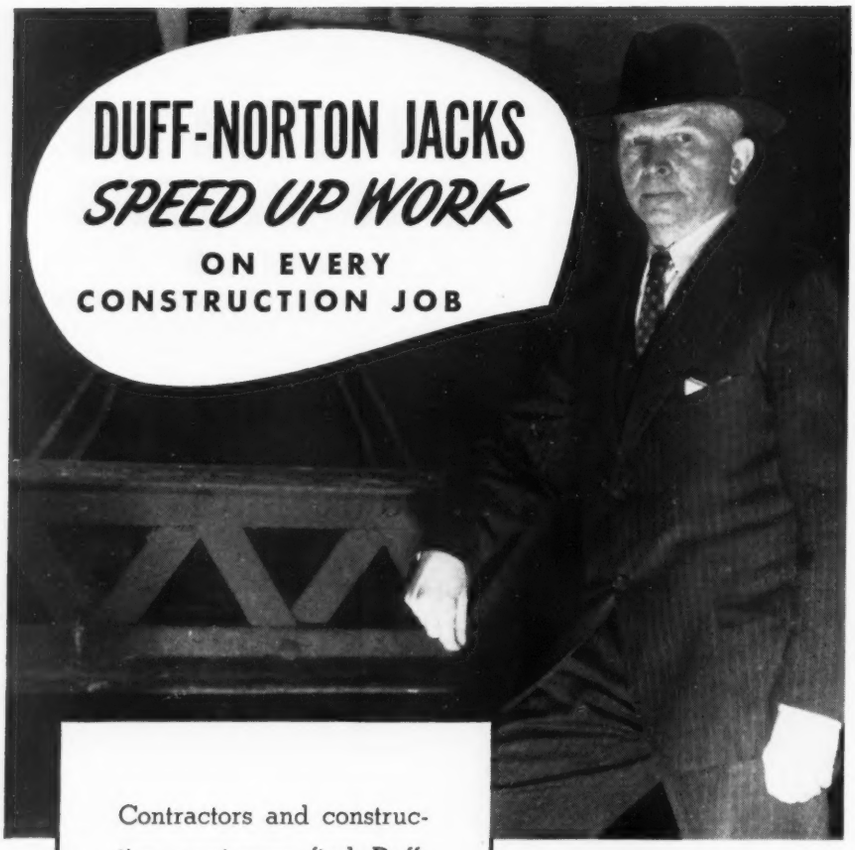
AMERICAN STEEL & WIRE COMPANY
USS
AMERICAN WELDED WIRE FABRIC
UNITED STATES STEEL



Every type of concrete construction needs American Welded Wire Fabric reinforcement.



FACTORIES | SMALL HOMES | SCHOOLS | SKYSCRAPERS | HOSPITALS



Contractors and construction engineers find Duff-Norton's complete line of Jacks ideal for building or repairing bridges, constructing or wrecking buildings, rigging and all heavy lifting, lowering, pushing or pulling of steel girders, plate, machinery, etc. required on construction jobs.

WRITE for Catalog 203A, for complete data on jacks that help speed up construction jobs.

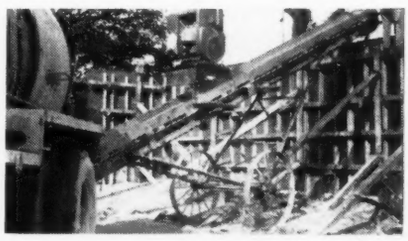
THE **DUFF-NORTON** MANUFACTURING CO.
PITTSBURGH 30, PA.
See Your Associated Equipment Distributor.

SMALL WELDED POWER ROLLER —Cutting down road roller from elephant-size to pony-size and still keeping it rugged, is accomplished in new roller, believed to be first ever built for rolling lawns, driveways, etc. It is almost entirely of

all-welded steel construction and weighs approximately one ton, has 3.5-ft. wheelbase and 42-in. body width. Weight can be increased when desired by adding 600-lb. concrete block in machine bed. Each roller section of water-tight welded construction can be filled through inlet in side wall.—**Steel Equipment Co., 2890 E. 83rd St., Cleveland, Ohio.**

SAW TABLE — Practically a complete woodworking shop, H & A saw table, with lightweight, polished aluminum alloy top, can be carried anywhere on job and operated from any 110-220-v., 60-cycle outlet. Table top is 39 in. wide by 51½ in. long. Many processes can be handled with speed and accuracy. Saw carriage rolls on life-sealed ball bearing rollers providing feather-touch and easy operation.—**Heston & Anderson, 615 W. Kirkwood St., Fairfield, Iowa.**

TROUGH CONVEYOR — Concrete from ready-mix trucks is speedily moved to point of placement by this conveyor, with belt widths ranging from 18 to 24 in. and length of 20 to 40 ft. with vertical heights adjustable from 7 to 11 ft. for 18 in. x 20 ft. unit and from 12 to 21 ft.

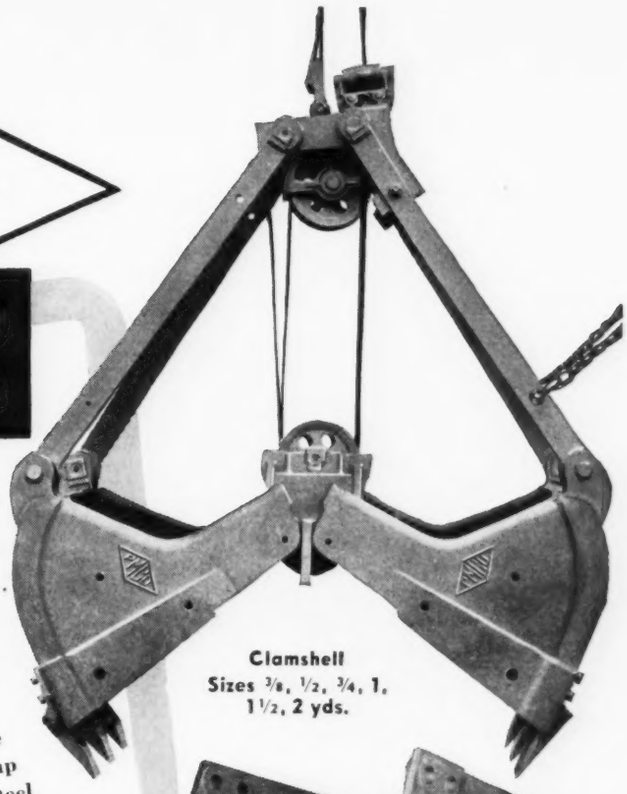


for machines 40 ft. long. Low feed end permits scraping material to carry belt instead of lifting it by shovel to feed hopper. Frame is constructed of 3/16-in. steel angles and flats, braced to assure maximum rigidity. Company also makes sectional conveyors in 35 to 75-ft. lengths.—**A. B. Farquhar Co., York, Pa.**

PMCO

America's Most Complete Line of Material Handling Buckets

All purpose
- SHOVEL
- PULLSHOVEL
- DRAGLINE
- CLAMSHELL



Clamshell
Sizes 3/8, 1/2, 3/4, 1, 1 1/2, 2 yds.

• FRONTS, BOTTOMS, SCOOPS AND TEETH are 14% manganese steel developing tensile strength up to 120,000 p.s.i. This high percentage manganese steel gives tough, rugged strength for hard service and allows wide set corner teeth for easy entrance in digging. Volume production methods enable us to build a better bucket with amazing economies in manufacturing.

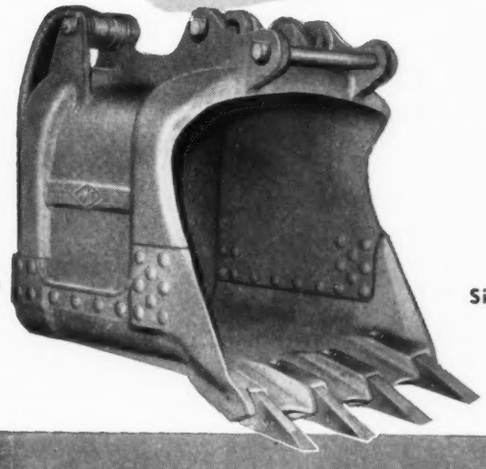
Pullshovel
Outside Cutter Widths
26"—31"—36"—39"

On the ½ yd. and ¾ yd. Shovel, Pullshovel Bucket and Dragline Buckets, all teeth are interchangeable — a great advantage to operators.

Experience Counts

See your shovel man or equipment dealer about PMCO Buckets and Dippers.

Dragline
All Purpose Sizes 3/8 to 2 yds.
Stripping sizes 2 to 9 yds.

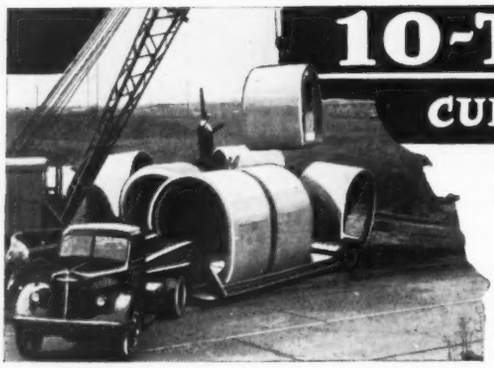


Shovel
Sizes 3/8 to 18 yds.

"Quality Since 1880"

PETTIBONE MULLIKEN CORP. CHICAGO 51, U. S. A.

WE OPERATE THE LARGEST AND MOST COMPLETE MANGANESE STEEL FOUNDRY IN THE UNITED STATES.



10-TON CULVERT SECTIONS

are
"MADE TO ORDER"
for this
ROGERS TRAILER

The broad, sturdy deck of this Rogers trailer readily accommodated four huge culvert sections. This 40-ton load was swiftly and easily transported to the construction location.

Write for the catalog illustrating a complete range of sizes and types.

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ROGERS TRAILERS

EXPERIENCE *builds 'em* • PERFORMANCE *sells 'em*

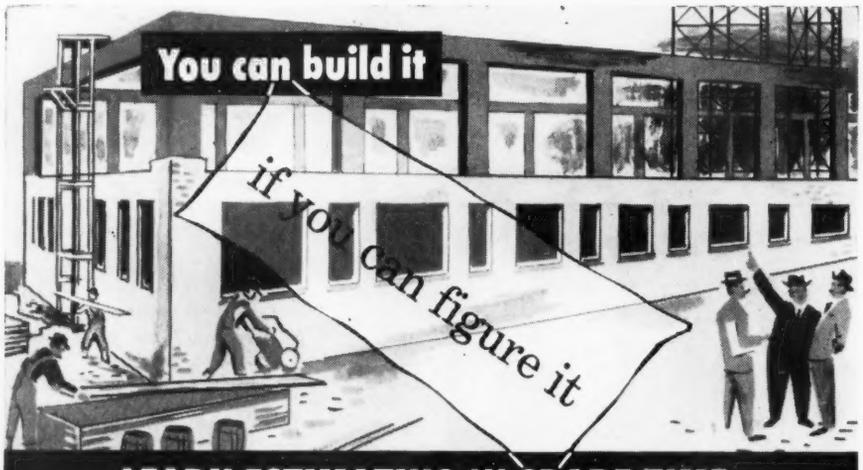

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Figure big or little jobs quickly and accurately the Tamblyn way for DEPENDABLE profits! Analyze current building costs. Learn the simple, easy Tamblyn System of Estimating — in your SPARE TIME! Used by successful contractors for more than 20 years. Try it for 10 days at our expense! *The Tamblyn System*

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FREE TRIAL Send me Tamblyn System on 10 day trial. I will pay $5.00 per month until $30.00 is paid if I keep it. If not, I will return it.

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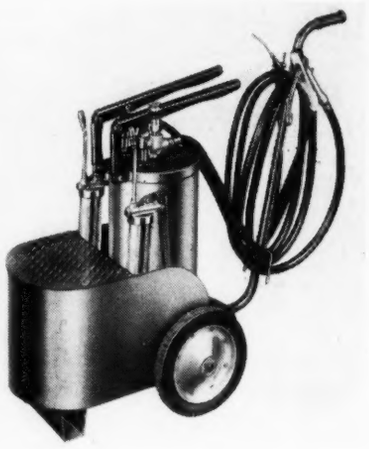
ADDRESS_____

CITY STATE

SEND NO MONEY! TRY IT BEFORE YOU BUY!

STUD WELDING — Marked reduction in cost of installing sprinkler systems in new and existing structures is said to be possible as result of recent listing by Underwriters Laboratories, Inc., of stud welding as acceptable method for installation of sprinkler hangers. Threaded female studs are welded directly to structural steel, eliminating drilling purlin and bolting up hanger rod from both sides, substantially reducing installation time and expense. Studs cost one-fourth to one-third as much as beam clamps or other conventional hanger connectors. — **Nelson Stud Welding Corp., 2715 Toledo Ave., Lorain, Ohio.**

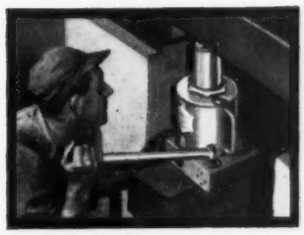
LUBRICATING UNIT — New lube service cart is complete lubricating department on wheels, which needs no air or electric connections. It carries generous supply of three different lubricants, two greases and one



oil, to eliminate frequent trips to oil storage room. Two 1-lb. lever guns and one ½-pt. pistol oiler are included. Pressure lube pump has built-in gun loader for hand guns. Front section of cart incorporates large tool box. — **Gray Co., Inc., Graco Square, Minneapolis 13, Minn.**

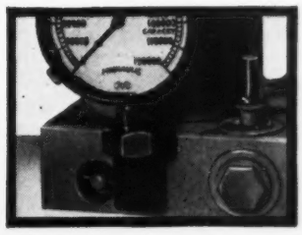
New... built for Construction

An *Exclusive* combination of Benefits are now Created for You by These New Heavy-Duty Jacks!

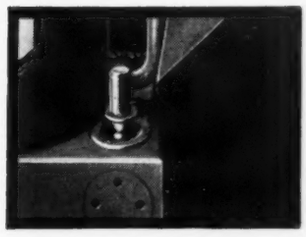


PATENTED DOUBLE PUMP—all in ONE unit! Speed pump provides fast load-contact—powerful load pump cuts in automatically! No shifting handle or double-yoking as with separate pumps.

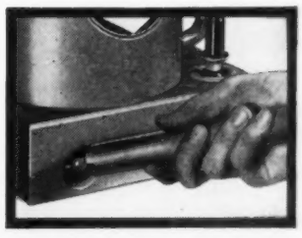
ALL-DIRECTIONAL OPERATION—Full power and travel at any angle, vertical to horizontal. Handle forms positive side-rest for horizontal use.



GAUGE EQUIPPED — Base is tapped for hook-up of gauge to show amount of pressure exerted — for measuring or testing applications.



PUMP BEAM PROTECTION is provided by handle and base. Pump is concealed. Beam is protectively enclosed at entry point to base.



SUPER STRONG BASE—machined from single piece of non-porous steel. Release valve is recessed to prevent accidental lowering and breakage.

CHECK these cost-cutting features of the new 30-ton FB-11 and the 50-ton GB-11. They bring you outstanding new jack performance never before known in construction and maintenance work. (Other Blackhawk models include 3, 5, 8, 12, and 20-ton sizes.) See your Blackhawk Industrial Supply Distributor for full information on these new Jacks.

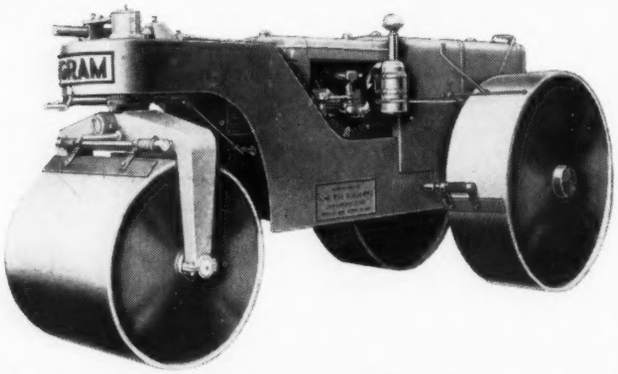
***A Product of* BLACKHAWK MFG. COMPANY, Dept. J-2377, Milwaukee 1, Wisconsin**

Always Specify

BLACKHAWK
HYDRAULIC JACKS

SHORT WHEELBASE OF 5-TON INGRAM INCREASES ROLLER MANEUVERABILITY

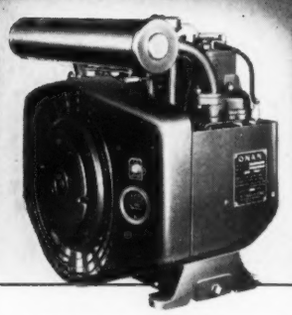
Now—more than ever before—the Ingram Model 56 is preferred by operators and contractors alike. Because the new, shortened wheelbase greatly increases ease of handling . . . makes possible greater savings in time on all jobs. See your Ingram distributor now — get the FACTS before you buy ANY roller.



INGRAM ROLLERS
ACME WIRE & IRON WORKS San Antonio 6, Tex.

SMOOTH POWER *Two-Cylinder*

The NEW ONAN *AIR-COOLED* **10 H.P. 4 CYCLE "CK" ENGINE**



A new, light, compact, easily-installed engine of wide power range. Completely "De Luxe" equipped, easy-to-get-at controls, and many other *plus* points. Prompt delivery on early orders.

ONAN ELECTRIC PLANTS—A.C.—350 to 35,000 watts in standard voltages and frequencies; D.C.—600 to 10,000 watts, 115 and 230 volts. Battery chargers—500 to 6,000 watts, 6, 12, 24, 32 and 115 volts. ONAN AIR-COOLED ENGINES—CK: 2-cylinder opposed, 10 h.p.; BH: 2-cylinder opposed, 5.5 h.p.; IB: 1-cylinder, 2.5 h.p.

- **HEAVY-DUTY CONSTRUCTION:** Short, sturdy crankshaft. Extra-large bearings.
- **SMOOTH POWER:** Opposed 2-cylinder design. Fully counter-balanced crankshaft.
- **SUPER COOLING:** Axial-flow fan delivers 600 cu. ft. of cool air per minute. Larger fin area.
- **ALUMINUM CONSTRUCTION:** High-strength aluminum castings reduce weight.
- **ELECTRIC STARTING AVAILABLE:** Built-in electric push-button or automatic starting.
- **COMPACT, LIGHT WEIGHT:** Fits into 15 x 19 x 18 inch space. Weighs only 97 pounds.

Onan PRODUCTS

WRITE FOR SPECIFICATIONS

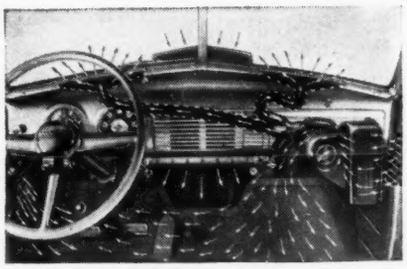
D. W. ONAN & SONS INC.
4956 Royalston Ave. Minneapolis 5, Minn.

ONAN 4-Cycle ENGINES

TIE PLATE DRIVE SPIKE—Threaded fastener, for use in tie, switch and gage plates, anti-creeper strips at crossings and similar installations, is designed to fit ¾-in. holes in plates. It is driven, not turned, into ⅜ or 7/16-in. pre-bored hole in timber. Spike turns as it is being driven and thus does not break wood fiber. Square head is provided so it can be pulled out of hole. About 13,000-lb. vertical pull is required to withdraw it from treated oak ties. Spike is made of 11/16-in. dia. steel, with O.D. of thread 23/32 in.—**Oliver Iron & Steel Corp., Pittsburgh 3, Pa.**

CAST IRON ELECTRODE — Nicast is new P&H electrode reported by manufacturer to put cast iron in class with steel for ease of welding and finishing. Made to operate on either a.c. or d.c. current, it is available in either ⅛-in. or 5/32x14-in. sizes. — **Harnischfeger Corp., Milwaukee 14, Wis.**

TRUCK IMPROVEMENTS — Unprecedented advancements and features for comfort and safety of driver, as well as numerous mechanical improvements, are incorporated in advance-design line of trucks and commercial cars. New trucks are produced in wide variety of models on nine wheelbases for practically



every type of hauling, with each unit precision-engineered and its component parts selected for their capacity for work load. Gross vehicle weights range from 4,000 to 16,000 lb. Vehicles are powered by either Thrift-Master engine or Load-Master engine. Features include: Completely welded truck cab; wider bodies; new ventilating system (illustrated); pick-up bodies 50 in. wide; "alligator type" hood design.—**Chevrolet Motor Division, General Motors Corp., Detroit, Mich.**

a thousand and one

MACWHYTE WIRE ROPES

When you use the correct wire rope, both the rope and your equipment last longer, cost less to operate. Macwhyte consulting engineers will check your equipment and recommend the wire rope specifically engineered for your job. Ask your Macwhyte distributor, or write Macwhyte Company.

... all job-proved... assure you the correct rope for your equipment

make MACWHYTE your headquarters for WIRE ROPE and SLINGS

MACWHYTE PREFORMED AND NON-PREFORMED INTERNALLY LUBRICATED WIRE ROPES... MONARCH WHYTE STRAND Wire Rope ...Special Traction Elevator Rope ... Stainless Steel Wire Rope ... Monel Metal Wire Rope... Galvanized Wire Rope... Atlas Braided Wire Rope Slings, Hi-Fatigue Aircraft Cables, Assemblies and Tie-Rods. Catalogs on request.

NO. 918

MACWHYTE WIRE ROPE

Manufactured by Macwhyte Company
2941 Fourteenth Avenue, Kenosha, Wisconsin

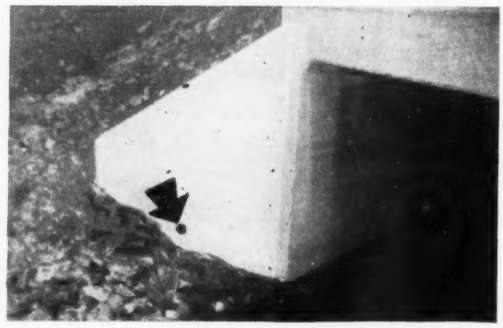
Mill Depots: **New York · Pittsburgh · Chicago · Minneapolis · Fort Worth Portland · Seattle · San Francisco · Los Angeles**
Distributors throughout the U.S.A. and other countries

for forming Culverts–Storm Sewers

Small culverts—simply dig ditch—lay a 3" base of concrete—place SONOTUBE in position and back-fill with concrete.

Simple connections and angles are also practical for outfall storm sewers by using method similar for culverts.

Weep holes for bridge abutments are easily and cheaply formed in any diameter with SONOTUBES.



New and Novel Uses for Sonotubes
are saving construction dollars daily

IMMEDIATE DELIVERY

SIX STANDARD DIAMETERS

INSIDE DIAMETER					
8"	9"	10"	11¼"	12"	13½"
SQUARE INCHES					
50.26	64	78.54	100	113.1	144

Lengths up to 24', Carload App. 2400', 13½" Diameter
Smaller Sizes Available
Write for literature and delivered prices

SONOCO PRODUCTS COMPANY
HARTSVILLE, S. C. MYSTIC, CONN.
ROCKINGHAM, N. C. GARWOOD, N. J. LOWELL, MASS.

SPREADER BOX—This all-welded box can be bolted on dump truck body, replacing tail gate. Weight is 105 lb. for box that fits 6-ft. wide

dump truck body. Half-circle opening can be regulated to any desired aperture up to 6 in. Material pours through this opening evenly, aided by force of gravity.—**Yaun Welding Boiler & Machine Works, 2100 N. Third St., Baton Rouge, La.**

HYDRAULIC ROAD SANDER — Unit known as hydraulic road sander is designed to simplify problem of sanding icy or snowy streets and roads. It can be attached to rear of dump body of any auto truck with power take-off. With body elevated, sand is carried by agitator to opening where it falls on to rotating distributor that spreads sand, cinders, other chemicals, or abrasives evenly on highway. Portion of sand is thrown ahead of rear wheels, providing traction even while highway is being sanded. — **Hydro Spreader Corp., 2101 W. Purdue St., Milwaukee 9, Wis.**

MACHINERY TRAILER — Lightweight double drop machinery trailer fabricated of high tensile strength steels has weight 5,000 lb. less than similar equipment. This will permit heavier pay loads, cut

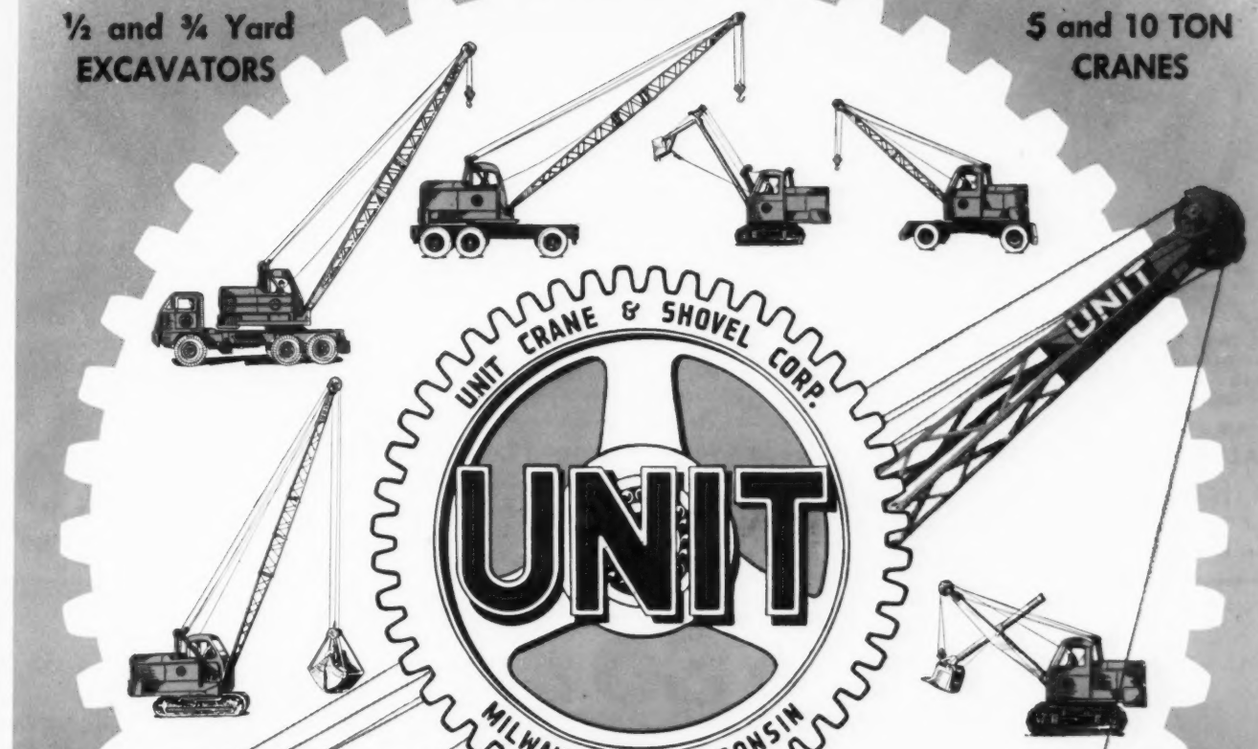
maintenance costs, tire wear and operating expense. In some instances it will allow moving of heavy equipment over roads previously barred by gross tonnage restrictions. — **Pointer-Willamette Co., Inc., Portland, Ore.**

Super Service

ON ALL TYPES OF JOBS!

½ and ¾ Yard EXCAVATORS

5 and 10 TON CRANES



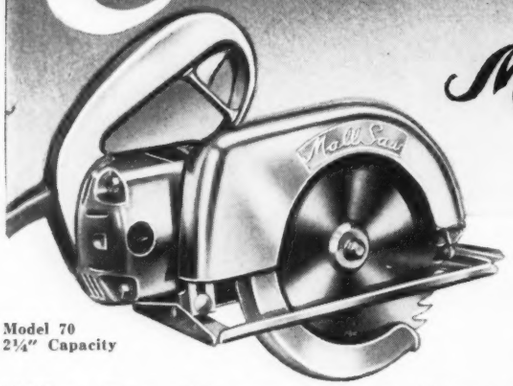
Every UNIT is FULLY CONVERTIBLE

Regardless of whether your job calls for a shovel, clamshell, magnet, dragline, trenchoe, grapple or backfiller, a UNIT machine easily "fills the bill"! For UNIT is convertible to ANY attachment and gives an excellent account of itself on ALL types of service. The change from one attachment to the other can easily and quickly be made on the job, by any ordinary mechanic. UNIT exclusive features include: Automatic traction brakes... Disc type clutches... One-piece cast gear case and above all, UNIT's safety-promoting FULL VISION CAB.

CONTACT FACTORY DIRECT FOR PRICE AND DELIVERY

UNIT CRANE & SHOVEL CORP. 6305 WEST BURNHAM STREET MILWAUKEE 14, WIS., U.S.A.

Cut • COSTS • TIME • WASTE with A MallSaw REG. U.S. PAT. OFF.



Model 70
2¼" Capacity

Every cutting job—cross-cutting, ripping, dadoing, angle cutting, bevel cutting, multiple cutting, mortising, scoring, or cutting light gauge metals—can be done faster . . . better . . . cheaper with an Electric MallSaw. Clean, quick, accurate cuts save time—provide square board ends . . . assure better fitting . . . eliminate waste. The Model 70 MallSaw has a 2¼" capacity on straight cuts; the Model 86—2⅞". (Capacities vary slightly on bevel cuts.) Larger and smaller models are also available. All have powerful Universal Motors.

Ask your Supplier or write Contractors' Equipment Division for literature and prices.

MALL TOOL COMPANY, 7757 South Chicago Avenue, Chicago 19, Ill.

26 Years of "Better tools For Better Work"

Mall REG. U.S. PAT. OFF. PORTABLE POWER TOOLS

"I LIFT ONLY 80 LBS. OF THIS 400 LB. LOAD!"

Sterling Tubular Framed Barrow—all welded, no rivets, lapped at corners. Steel re-inforcing rod around top edge.

Sterling's scientifically balanced construction actually takes 80% of the load off the arms and backs of the barrow men. With Sterling Wheelbarrows, crews work faster, make more trips, haul more yardage per day. And quality, all-welded construction keeps Sterlings on the job longer, reduces job costs.

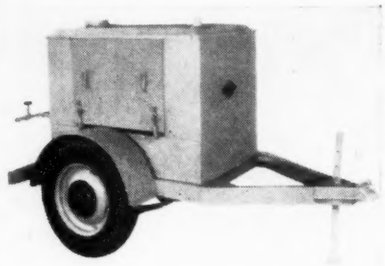
Deliveries of Sterling all-steel, tubular framed barrows are being stepped up as rapidly as the material situation permits.

STERLING WHEELBARROW CO., Milwaukee 14, Wis.

Look for this Mark of STERLING Quality

Sterling WHEELBARROWS

VAPOR STEAM-CLEANING UNIT —Enclosed-coil type unit with downdraft flame steam generator delivers hot vaporized spray in either wet or dry state under pressures up to 200 lb. It generates sufficient steam-cleaning pressure to operate two steam guns simultaneously. Improved model is said to incorporate simplified grouping of gages and controls; redesigned piping system; plus compressed-air valve accessory for 2-min. anti-freezing of entire water-steam system. Fuel tank of 12-gal. provides ample steam generation for an uninterrupted eight-hour, two-gun cleaning cycle.—**Oakite Products, Inc., 124G Thames St., New York 6, N. Y.**



MATERIAL HANDLING MACHINE —Power steering and an enclosed cab are new, optional equipment on standard model Scoopmobile, tricycle-type materials handling machine.

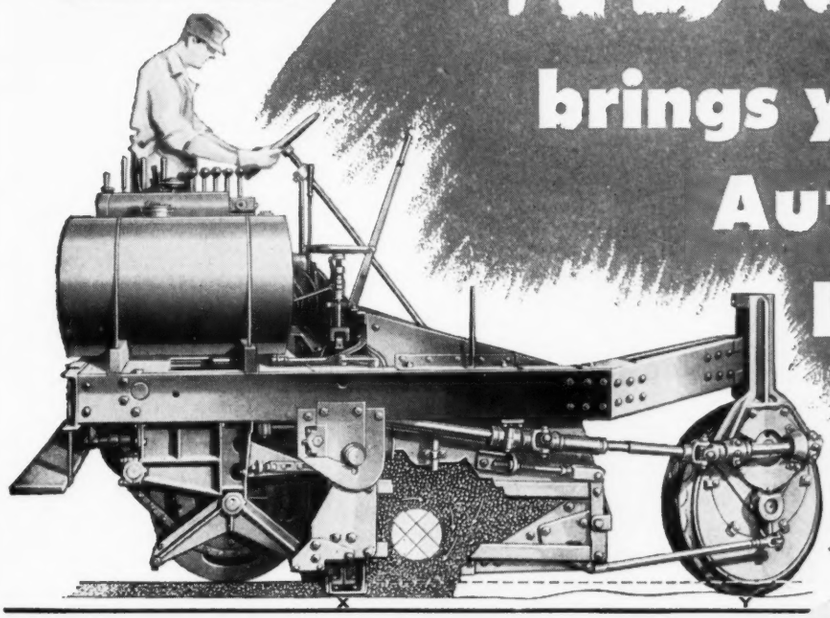
Cab features deluxe, full-size upholstered seat, windshield wiper, and large safety plate windshield. Both sides have doors that may be latched open in warmer weather. —**Mixermobile Manufacturers, 6853 N.E. Halsey, Portland 16, Ore.**

SNOW VEHICLE — Broad, rugged ski-runners and carefully engineered "floating drive" link tracks, enable Tucker Sno-Cat to operate with equal ease over ice or free, heavy, virgin snow; and with the wheels lowered, it can travel over bare ground. Special attention has been given to the problem of side-

(*Continued on page* 145)

the ADNUN brings you true Automatic Leveling

Photo diagram of Adnun showing material being fed to grade. Note that even if a front wheel falls into deep depression at *Y* the deflection of the Cutter Bar Screed at *X* is negligible.



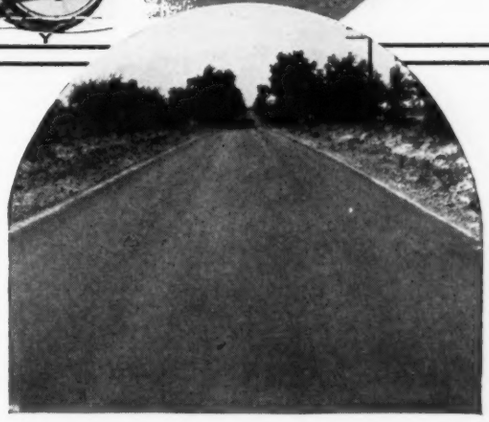
There are two important features responsible for Adnun's unusual accuracy in laying pavement. In the first place, the Adnun travels on the finished course, using it as a smooth template. In the second place, with the Cutter Bar Screed set close to the rear rollers and far back from the front wheels, there can be little deflection in the Cutter Bar even when the front wheels strike a major deflection.

There are no springs or floating mechanisms. There is nothing to tear the pavement and no special preparation of shoulders is required.

Adnun Continuous Course Correction is true Automatic Leveling. It means lower cost resurfacing of old pavement, less attention to the grading of subgrade and smoother black top roads. Don't buy a black top paver without checking into these details. Let us send you the whole story.

THE FOOTE COMPANY, INC.
1910 State Street, Nunda, New York

ADNUN
TRADE MARK REGISTERED
BLACK TOP PAVER



Adnun fitted with the Adnun Carryall. These retractable wheels are supplied as extra equipment and make possible fast, easy travel between jobs or quick return to the beginning of the course.

Builders of **ADNUN BLACK TOP PAVERS, MULTIFOOTE CONCRETE PAVERS, AND FOOTE KINETIC MIXERS**

HARMS BROS. CONTRACT, CALIF. STATE HIGHWAY #24, CONCORD, CALIFORNIA

—with a fleet of FOUR Wooldridge Terra-Cobras

Widening and straightening a narrow winding two-lane bottleneck is another typical job calling for Wooldridge high-speed, self-propelled Earthmovers. Working in a 700 foot cut at the summit of Willow Pass on California State Highway #24, four Wooldridge Terra-Cobras maintained an average of 920 cubic yards per unit, per shift, over a 5000 foot round trip cycle, down and back a 15 to 30 per cent grade. Loading was effected in less than 75 feet, in 33 to 39 seconds. Soft clay, sand and adobe was spread on an 1800 foot fill at an average speed of 15 M.P.H. For high hourly averages on long or shorter hauls, you'll profit by investigating Wooldridge Terra-Cobras, today. Write for complete data and performance details.

WOOLDRIDGE TERRA-COBRAS employ the same Bowl features as Wooldridge "Terra-Clipper" tractor-drawn Scrapers

Measure Each Job in terms of WOOLDRIDGE EQUIPMENT:

- ★ High Speed EARTHMOVERS
- ★ Tractor-drawn SCRAPERS
- ★ BULLDOZERS
- ★ TRAILBUILDERS
- ★ RIPPERS
- ★ POWER CONTROLS

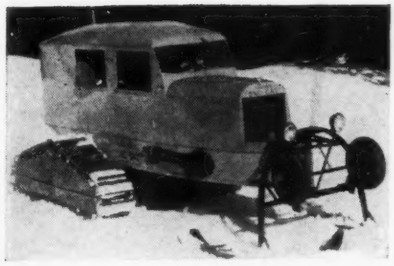
WOOLDRIDGE

TERRA COBRA

HIGH SPEED-SELF PROPELLED

EARTHMOVERS

WOOLDRIDGE MANUFACTURING CO.
SUNNYVALE, CALIFORNIA
NATIONWIDE SERVICE



(*Continued from page* 142)

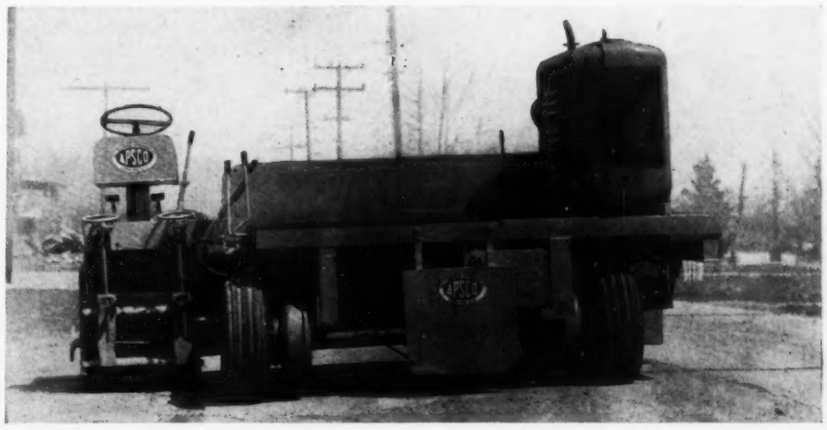
hill slippage, and the machine will navigate cross-hill on slopes up to 35 percent. Speeds range from 3 to 10 mph. in deep heavy snow, up to 10 and 15 mph. on roads and broken trails. A Dodge 115-hp. motor, with four-speed transmission, low-ratio rear end drive, radiator and drive shaft brakes powers it.—**Tucker Sno-Cat Co., Grass Valley, Calif.**

PUNCH-LOCK KIT—New Clamp-Master kit that provides simple, easy and inexpensive method of clamping, splicing, tying, mending and banding offers many possibilities as a maintenance tool for shops and in-

dustries. Kit is ideal for hose clamping high or low pressures, maintenance of general nature and miscellaneous repairs such as splits or breaks in pipes, posts, ladder rails, shovel handles or other similar items.—**Punch-Lock Co., Chicago 7, Ill.**

HYDRAULIC PIPE BENDER—Portable hydraulic Aujax pipe bender is light in weight and simple to use. It comes complete with hydraulic jack which has screw extensions for maximum bends. Dies and ram extensions for 180-deg. bends can be furnished. The 24-in. unit comes complete with ¾, 1, 1¼, and 1½-in. dies and weighs 150 lb. The 30-in. unit comes complete with 1½, 2, 2½, and 3-in. dies and weighs 100 lb. All parts are electric welded and heavily reinforced. — **Electric Cord Co., 30 Church St., New York 7, N. Y.**

It's Easy, Fast, Economical to widen roads with the



APSCO Road Widener

● This modern machine offers contractors, state, county and city highway departments a practical, time and labor saving method for widening roads.

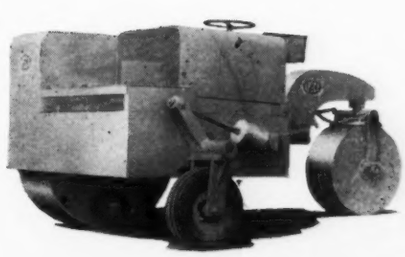
It handles all types of material from 2" down, including hot or cold bituminous mix, sand, gravel, stone, dirt, etc. Standard unit will spread a 2 to 4 foot width—any depth—and will handle over 120 tons an hour. Other widths available.

The machine is easily controlled by operator and truck driver merely dumps material into hopper while widening machine is in operation. The machine is accurate—leaves a straight edge without use of road forms—no raking or carrying back necessary.

Write for general specifications

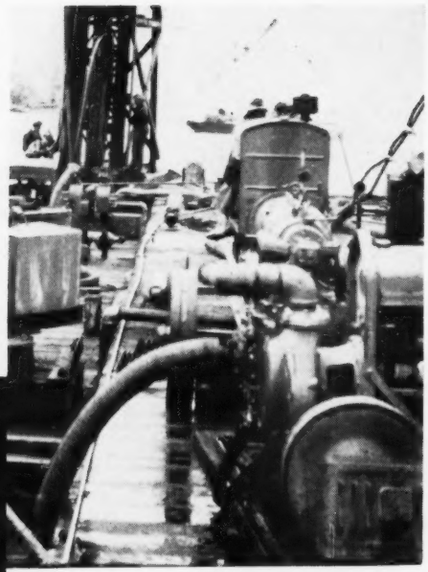
APSCO Trench Roller

One of the most practical features of the APSCO Trench Roller is the pneumatic tired leveling wheel with adjustment by powered screw-type leveling unit. An advantage both in operation and when hauling roller from one job to another. In operation, the elasticity of the pneumatic tire prevents roller from damaging forms when leveling wheel hits an obstruction. In hauling tire eliminates side slipping when loading on carry all or flat car . . . Automotive type steering gives greater maneuverability providing 45° turning radius. Front roll 15" wide—rear 18" wide. Write for complete specifications.



THE ALL-PURPOSE SPREADER CO.
FULLER ROAD . . . ELYRIA, OHIO

Keep the Job Rolling WITH



GOODALL "SSS" SUCTION HOSE

Every feature of this remarkable hose has been built into it to assure better, longer service from your pumps. Goodall "SSS", unlike ordinary suction hose, will stand up when the going gets tough and will stick by you until the job is completed.

"SSS" is Suction Hose at its best . . . a Goodall "Standard of Quality" product that will pay for itself in longer, more reliable service. Made in smooth bore only, in sizes up to 6".

Don't let the unexpected striking of water delay your work. Equip your pumps now with Goodall "SSS" Suction Hose and keep to the schedule that means job completion and profit to you.

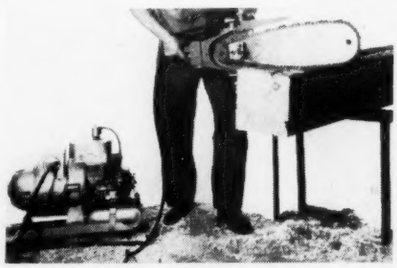
Contact Our Nearest Branch for Complete Details and Prices.

GOODALL RUBBER CO., INC.

THE GOODALL-WHITEHEAD COMPANIES

Philadelphia • Trenton • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles
San Francisco • Seattle • Salt Lake City • Houston • Factory: Trenton, N. J. • Est. 1870

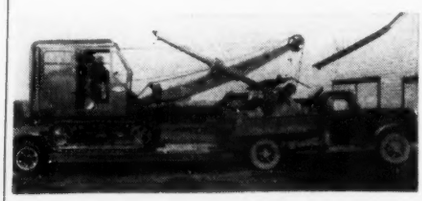
ELECTRIC CHAIN SAW—One-man, high-cycle electric chain saw weighs only 27 lb. complete. Operator fatigue is greatly reduced by elimination of excess weight, vibration, engine-heat and exhaust fumes encountered in direct engine-driven saws. It may be used for cuts at



any angle. Electric power is furnished by Homelite high-cycle generator driven by integral gasoline engine. Carryable 180-cycle generators are available in two sizes: Model 24A 230/180 with rated capacity of 2,500 w. and Model 25A 230/180 with rated capacity of 5,000 w. Motor is 2½ hp., 180-cycle 3-phase electric motor with grounded connection. **—Homelite Corp., Port Chester, N. Y.**

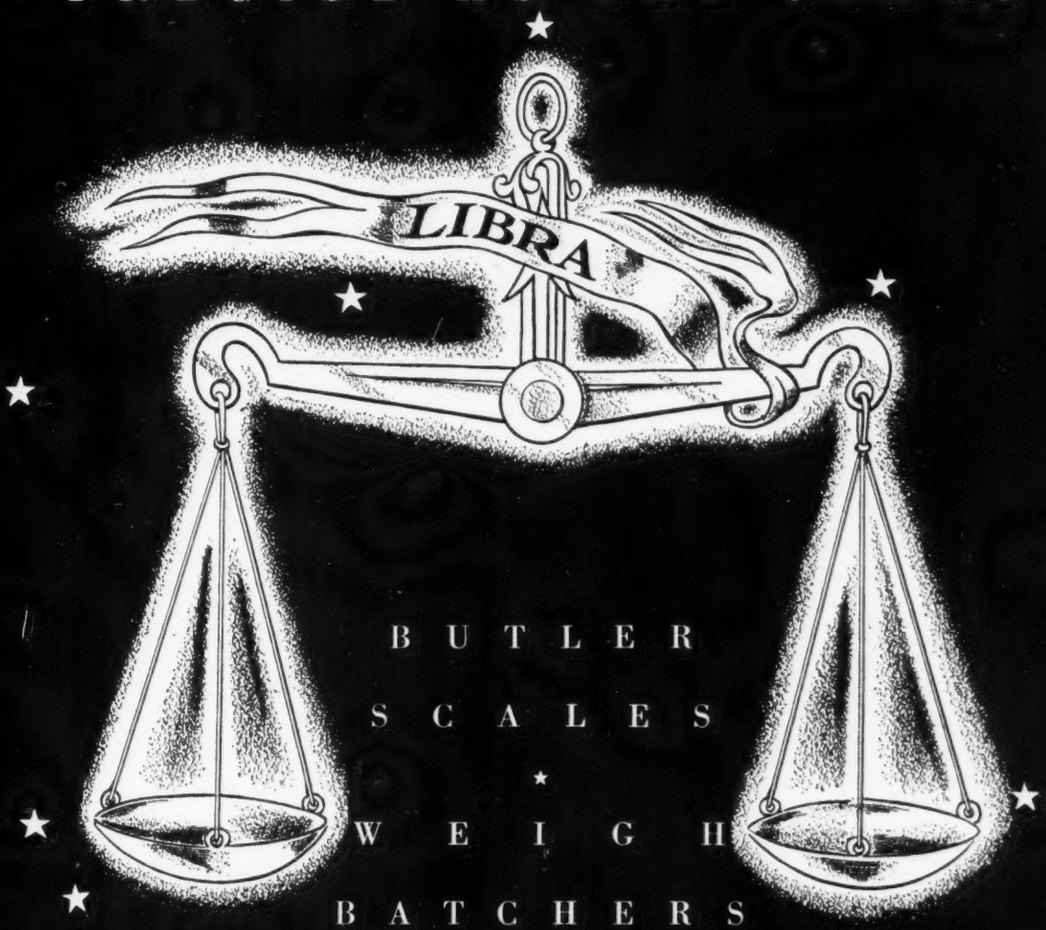
WIRE ROPE LUBRICANT—Leadolene "Klingfast" wire rope lubricant is available in colors which will serve to identify as well as protect wire rope products. Lubricant possesses Indestructible pH-ilm which is characteristic of Brooks products. Among properties claimed for "Klingfast" are: Unusual resistance to abrasion and corrosion; high affinity for steel and other metals; high resistance to water, lubricating oils and greases, scale, dusts, and other prevalent forms of contamination; excellent resistance to deterioration or malfunction caused by temperature extremes. **— Brooks Oil Co., Pittsburgh 19, Pa.**

ALL-WELDED STEEL TRAILER—Lightweight, all-welded steel trailer, capable of hauling heavy construction equipment while being towed by ordinary dump truck, is known



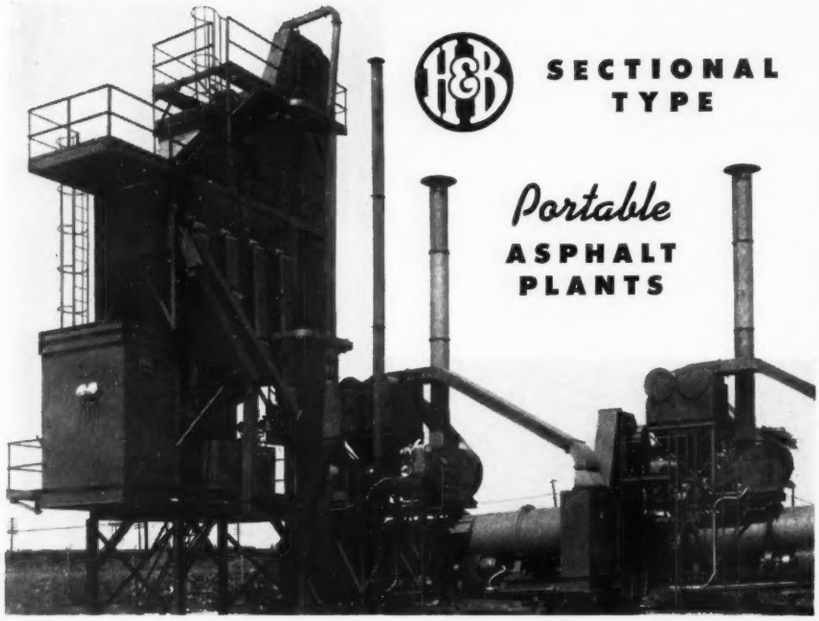
as "Tagalong Frontloader Trailer." Welded construction permits maximum joint rigidity while keeping overall weight at minimum. Trailers with load capacities of 10, 15 and 20 tons, all have 8x14-ft. deck.**—Rogers Brothers Corp., Albion, Pa.**

PRECISE AS THE STARS



BUTLER
SCALES
★
WEIGH
BATCHERS
★
MATERIAL
HANDLING
EQUIPMENT

BUTLER BIN COMPANY • *Waukesha, Wis.*



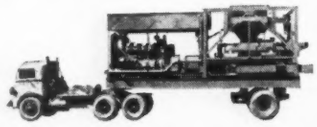
SECTIONAL TYPE

Portable
ASPHALT PLANTS

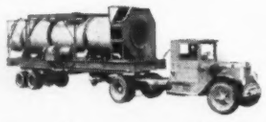
For Dependable, Uniform and Economical Production

PA PLANTS ARE EASILY PORTABLE BY TRUCK

All-electric mixer and weighing unit, with control house, mounted on tandem axle.



Diesel-electric-driven mixer and weighing unit with Diesel generator set mounted on main frame.



Same axle may be used to haul dryer unit as is used to carry mixer unit.

● First to build the sectional type asphalt plant, Hetherington & Berner, Inc., has always striven to build machinery which would give uniformly dependable production over a period of years. The record of H & B plants under all kinds of operating conditions is the best answer as to how well we have succeeded.

H & B sectional type plants are built in two general models: Model PE electrically-driven plants, recommended primarily for contractors who do not ordinarily move more than once or twice a season; Model PA plants, designed primarily for the contractor who moves frequently and who must be able to get efficient production on small as well as large jobs, and under a wide variety of operating conditions.

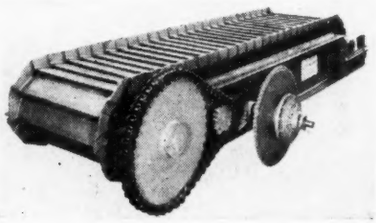
HETHERINGTON & BERNER, INC.
735 Kentucky Ave. • Indianapolis 7, Ind.

Bulletin P-46, describing both PE and PA plants, will be sent on request.

THE H & B MOTO-PAVER

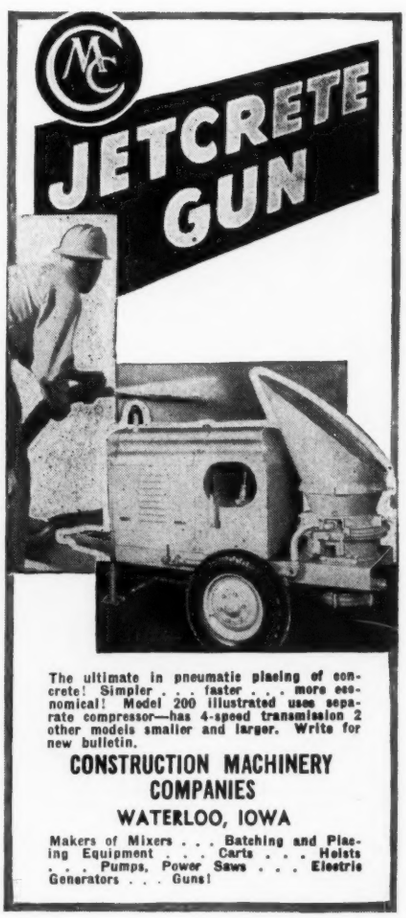
The complete traveling mixer and paver. A self-contained single unit machine which accomplishes the entire mixing and laying job in one continuous operation. *Write for Bulletin MP-47.*

LONG-DISTANCE FEEDER — New super-duty feeder gives operator greater flexibility in his feeding operations. First unit was 35 ft. long, and operating tests show that any reasonable length can be built. End-



less conveyor is fabricated of cast steel plates, hinged together with heat-treated alloy steel pins. Plates are reinforced with ribs to withstand severe impact. Anti-friction bearings are used throughout.—**Lippman Engineering Works, Milwaukee, Wis.**

JOINT-SEALING COMPOUND — Para-plastic, hot poured rubber seal for sealing expansion joints in all types of concrete construction is now produced in colors, including green, red, gray, cream and yellow. —**Servicised Products Corp., 6051 W. 65th St., Chicago 38, Ill.**



The ultimate in pneumatic placing of concrete! Simpler . . . faster . . . more economical! Model 200 illustrated uses separate compressor—has 4-speed transmission 2 other models smaller and larger. Write for new bulletin.

CONSTRUCTION MACHINERY COMPANIES
WATERLOO, IOWA

Makers of Mixers . . . Batching and Placing Equipment . . . Carts . . . Hoists . . . Pumps, Power Saws . . . Electric Generators . . . Guns!

YOU, TOO, CAN SAVE MONEY

with a truck like this

Here's a "*Job-Rated*" truck . . . a truck that FITS the hauling job for which it was built!

It stands to reason that a truck that fits its owner's operating conditions will give better performance, better service to customers, and operate at lower cost.

You, too, can buy a truck that will fit *your* job . . . save *you* money!

You can get a "*Job-Rated*" truck powered with exactly the right one of 7 engines—plus the *right* gear ratio—to provide the pulling power you need, with the economy you want.

Such a truck will be built with exactly the right clutch, transmission, rear axle—the right units throughout . . . for "top" performance with your loads over your roads.

You can be so sure of getting a money-saving, long-lasting truck like this, because Dodge builds 175 different "*Job-Rated*" chassis models.

To make sure that your next truck is a dependable, economical "*Job-Rated*" truck, see your Dodge dealer . . . because *only* Dodge builds "*Job-Rated*" trucks.

★ ★ ★

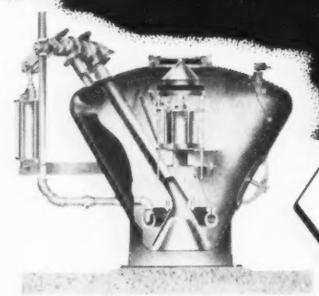
Your Dodge dealer is interested in your continued satisfaction: *First*, by selling you a truck that fits your job; *Second*, by giving you prompt, dependable Dodge truck service; *Third*, by providing you with factory-engineered truck parts that are identical with original Dodge "*Job-Rated*" truck parts.

DODGE

ONLY DODGE BUILDS "*Job-Rated*" TRUCKS

Fit the Job . . . Last Longer !

ROBINSON *Air-Activated* CONVEYOR



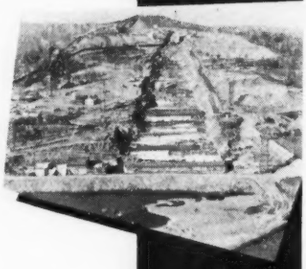
THE PNEUMATIC CONVEYOR THAT'S *Different*

"Float" CEMENT FROM SIDING TO MIXING PLANT AND *REDUCE COSTS*

Notice we didn't say "blast"... that comes when you have to use high pressure air. The Robinson System uses relatively low pressure air. The system is much simpler. There are no "power moved" parts in the system to get out of order and cause time lost and high maintenance.

The Robinson "Air-Activated" Conveyor has been used successfully on several large construction projects for moving cement from siding to mixing plant. The longest travel was about 3500 feet; the greatest elevation about 425 feet.

Look into the Robinson System for your next big job. It has much to offer in the way of reducing costs.



ROBINSON *Air-Activated* CONVEYOR SYSTEMS

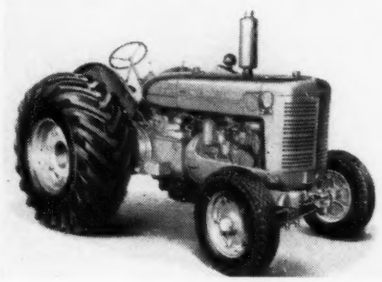
Division of MORSE BOULGER DESTRUCTOR CO.

211-C East 42nd Street • New York 17, N. Y.

Representatives in Principal Cities

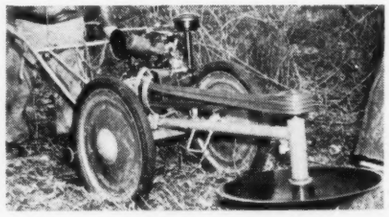
...SPEED CONSTRUCTION *with* CLIPPER PORTABLE HOISTS
• UNLOADS AUTOMATICALLY
• 2 to 1 RATIO
One-Man operation... Clamps to Scaffold. Ideal for Brick, Tile, Blocks, Mortar and many other construction items.
$59.50 You can have Clipper Hoists on FREE TRIAL Write for Literature!
Brick Clamps $5.50 ea.
Tile Clamps $4.50 ea.
CLIPPER MFG. CO.
2800 WARWICK • KANSAS CITY 8, MO.
Factory Branches
Philadelphia St. Louis Austin, Texas
CLIPPER PORTABLE HOISTS
by the Makers of
CLIPPER MASONRY SAWS

INDUSTRIAL WHEEL TRACTORS — To facilitate off-the-highway movement of scrapers, wagons, and trailers, International Harvester has developed single rear tires and wheels for its I-9 (55-hp. gasoline engine) and ID-9 (52-hp. diesel engine) industrial wheel tractors. With



this new tire, trailed equipment follows track of tractor without incurring any difficulty in steering or other attendant operations. New, large 18.00x26 single rear tires give same tread as dual-tired units, as well as permitting maximum drawbar pull of 5,500 to 7,500 lb., depending on ground conditions and amount of weight on drive wheels.—**International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.**

PORTABLE SAWS — Important design innovations on new model 100 engine-driven C-Saw are Rototrac self-propelling feature and automatic, mercury-type C-Saw clutch. Rototrac self-propeller is simplified friction drive that operates from engine shaft. Clutch is mercury filled



fluid and centrifugal action type. Advanced aircraft type wheel and axle design has been added, which contributes to reduced weight and greater strength. All new models include adjusting screw base belt tightener, whereby belt tension is instantly controlled by screw adjustment of engine carriage base moving on machined slides.—**Harry A. Lowther Co., 141 W. Jackson Blvd., Chicago 4, Ill.**

TWO-WHEEL SCRAPER — Two-wheel hydraulic scraper designed for high-speed use with large wheel tractors is made in three sizes—H52 (4.5); H62 (5.6); and H72 (6.9 heaped vd.)—for International 19, Oliver 900, and other heavy-duty wheel tractors. These models have low

(*Continued on page* 152)

Above—A Marlow Model 641 easily handles a bridge caisson dewatering job at Route 6 construction over Passaic River, N. J. P. T. Cox Construction Company, Inc.

Whenever construction men talk pumps, Marlow Water Wizards come in for more and more praise for the difficult jobs they do.

A Water Wizard will prime and pump entirely automatically, *even on suction lifts as high as 25 feet.* It can pump more liquid per horsepower than any other pump. A Water Wizard avoids trouble because it contains no trouble-making parts. No jets or ports to clog or jam. No parts to be set or adjusted or to get out of order. And it has unusual stamina because of its extra strength throughout.

Marlow Water Wizard Self-Priming Centrifugals are made in 1½ to 10-inch sizes, 3,000 to 240,000 gallons per hour. Send for interesting booklets. Marlow Pumps, 516 Greenwood Ave., Ridgewood, New Jersey.

MARLOW PUMPS · Ridgewood, N. J.

Manufacturers of Quality Pumps Since 1924

IT'S POWERFUL

IT'S SELF-CONTAINED

ONE MAN GANG OF ALL WORK

THAT'S SYNTRON

the

Gasoline Hammer

PAVING BREAKER

A really SELF-CONTAINED tool — requiring no air compressor or battery for operation — that will save you MONEY AND TIME.

Busting concrete
Cutting asphalt
Digging shale, clay
Tamping backfill

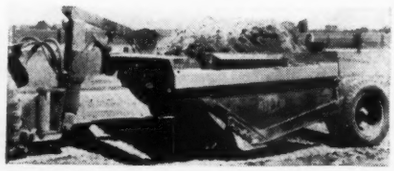
and a host of other jobs.

Write for Bulletin 8-45

SYNTRON CO.

500 LEXINGTON
HOMER CITY, PA.

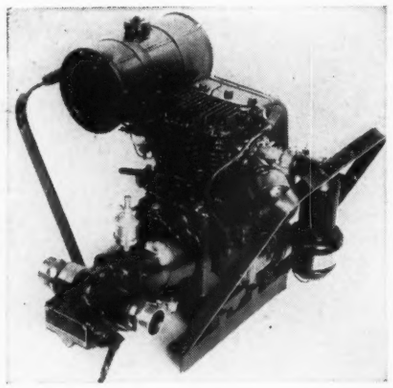
EASIER - FASTER CHEAPER



(*Continued from page* 150)

center of gravity, independent front apron, and rear apron that wipes scraper bowl sides clean as load is dumped. Simple yoke design and absence of overhead structure give operator good view of his work from tractor seat. Special hitch assembly eliminates front trucks of scraper. Travel speed is limited only by speed of tractor.—**American Tractor Equipment Corp., 9131 San Leandro Blvd., Oakland 3, Calif.**

PORTABLE PUMP — Recent addition to "MP" line of marine, industrial, and agricultural pumps is "MP" Duraflex 6600, portable high-pressure pump carrying rubber impellers. Self-contained power source is sin-



gle-cylinder, four-cycle engine, air-cooled and delivering 5 hp. Pump is mounted directly to engine and power is transmitted through splined sleeve. Duraflex 6600 delivers more than 40 gpm. at pressure of 120 lb. psi, has suction lift of over 30 ft. —**Marine Products Co., 515 Lycaste Ave., Detroit 14, Mich.**

ALL-ALUMINUM BELT CONVEYOR — Prefabricated, all-aluminum, belt conveyor called Mercury has all components such as chain, belt, sprockets, channels, angles, frame and other parts constructed of heat-treated aluminum alloy. This provides ample strength plus lightness. It is rust and corrosion proof, resistant to most acids, chemicals and fumes. It is available in widths from 6 to 60 in., heights from 15 in. up; standard height is 36 in. It is shipped prefabricated in 5-in. sections, which may be assembled in one continuous unit up to 150 ft. in only a few minutes' time.—**Patron Transmission Co., 129 Grand St., New York 13, N. Y.**

THERE'S A HERCULES DISTRIBUTOR NEAR YOU

ALABAMA—BIRMINGHAM: Aronov Auto Supply Co., Inc., 420 S. 21st St. MOBILE: Betbeze, 610 St. Anthony. MONTGOMERY: Jake Aronov Auto Parts & Tire Co., Cor. Bell & Whitman Sts.

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MASSACHUSETTS—BOSTON: (CAMBRIDGE) Hercules-Campbell Body Co., 130 Brookline St.

MICHIGAN—DETROIT: Waggy-Hoffman Equipment Co., 14089 Schaefer Hwy. (CHICAGO, ILL.) Stahmer Supply Co., 135 S. LaSalle St.

MINNESOTA—ST. PAUL: General Truck & Equipment Co., 2535 University Ave.

MISSOURI—KANSAS CITY: American Body & Equipment Co., 1411 Charlotte St. ST. LOUIS: Truck Equipment Co., 511 N. Channing Ave.

MONTANA—BILLINGS: Western Construction Equip. Co., 505 N. 24th St. MISSOULA: Western Construction Equip. Co., 218 W. Pine St.

NEBRASKA—LINCOLN: Highway Equip. & Supply Co., 21st & N Sts. SCOTTSBLUFF: Colorado Builders Supply Co., 602 W. 27th St.

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OREGON—PORTLAND: Newell Truck Equipment Co., 316 N. Russell St.

PENNSYLVANIA—ALTOONA: Brumbaugh Body Co., 100 Plank Road. ERIE: The Trailmobile Co., 1223 Walnut St. LEBANON: M. A. Brightbill Body Works, E. Cumberland St. at 7th Ave. PHILADELPHIA: Eastern Body Co., 21st & Fletcher Sts. PITTSBURGH: Hercules-Pittsburgh Body Co., 1717 Mary St., S. S.

SOUTH CAROLINA—COLUMBIA: South Carolina Equipment Co., P. O. Box 295.

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TEXAS—DALLAS: Truck Equipment Co., 2409-11 Commerce. FORT WORTH: Truck Equip. Co. HOUSTON: McArthur Welding & Press Co., 5525 Clinton Dr. SAN ANTONIO: Patten Machinery Co., 1318 N. Alamo St. CORPUS CHRISTI: Truck Equip. Co., 1501 Port Ave.

UTAH—SALT LAKE CITY: Hercules Body Sales Co., 2205 Highland Drive.

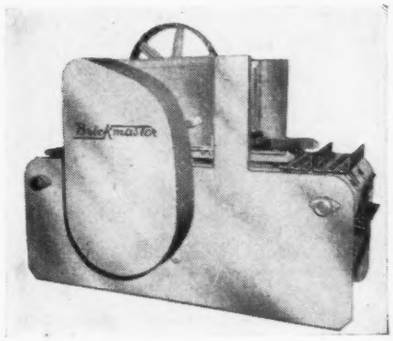
VIRGINIA—NORFOLK: A. S. Drumwright & Co., 1921 Brambleton Ave. RICHMOND: Crenshaw Equipment Co., Inc., 304 E. Main St. WINCHESTER: Schade Equipment Co.

WASHINGTON—SEATTLE: Allied Trailer & Equipment Co., 1331 Third Ave.

WEST VIRGINIA—BLUEFIELD: Truck Equipment Engineering Co., P. O. Box 387. CHARLESTON: West Virginia Tractor & Equipment Co., P. O. Box 473. CLARKSBURG: West Virginia Tractor & Equipment Co., 100 Wood St. HUNTINGTON: Huntington Truck Equipment Co., 919 Sixth Ave.

WYOMING—CASPER: Colorado Builders Supply Co.

BRICK MACHINE — New machine forms bricks six at one time every 3½ sec. on continuous conveyor arrangement at cost of less than $10 per thousand. It will make all standard size bricks in singles or multiples, or plain slabs. Many inexpensive local materials may be used, such



as slag from foundries, ore, sand, crushed stone, cinders, volcanic ash and other plentiful waste materials. Machine is durably built of welded steel with special heavy duty bronze bearings. Weighing 3,600 lb., it is so compact it can be installed in 2 hr., is readily moved about and is adapted to production line of any concrete plant or on construction job.—**Brickmaster, Inc., 115 Broadway, New York 6, N. Y.**

GASOLINE ENGINE — New Onan CK engine is 10-hp., 4-cycle, air-cooled prime mover. Weighing only 97 lb., it has endurance of engines several times that weight. Direct-

connected electric starter, which is built into flywheel as integral part, is optional feature. It also serves as generator during operation of engine for charging starting battery. — **D. W. Onan & Sons, Inc., 43 Royalston Ave., Minneapolis, Minn.**

VIBRATING SCREEN—New "CA" Concentric-Action Screen is inclined floor-mounted or spring-and-cable suspended screen with ingeniously balanced two-bearing vibrator mech-

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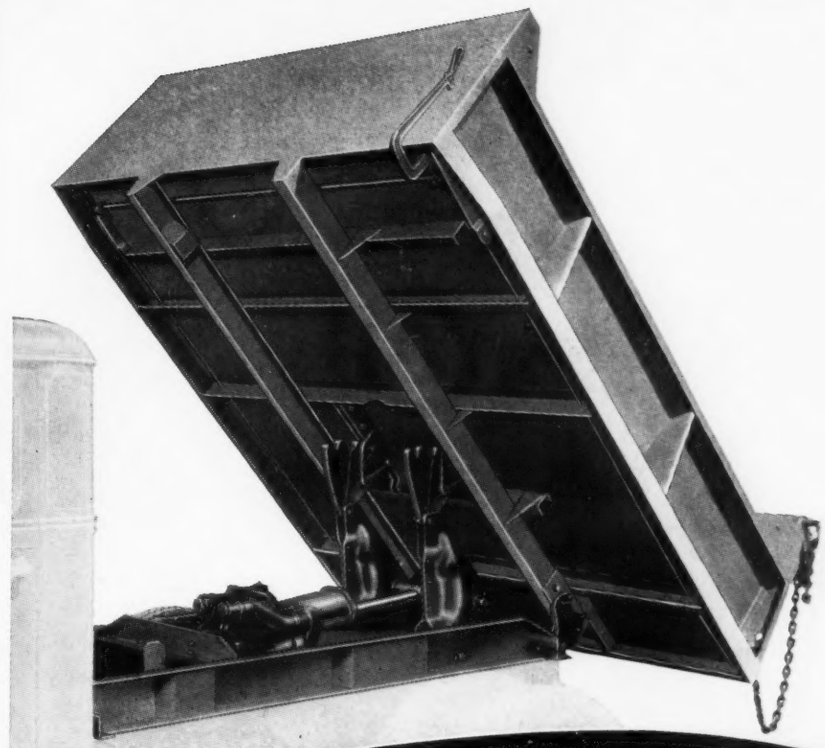

HERCULES *has the design and construction features you're looking for!*

- REINFORCED STEEL SUBFRAME
- RUGGED UNDER-STRUCTURE
- CENTER-LIFT HOIST
- PISTON-TYPE VALVE
- DASH BUTTON CONTROLS

THE FEATURES you want in hydraulic hoists and dump bodies are the features you'll find in Hercules-BILT equipment. Reinforced steel subframe, rugged underbody construction, piston-type valve and dash button controls provide better performance and longer service-life. And Hercules-BILT Center-Lift Hoist—lifts 4 inches ahead of the center of the load on an 8-foot body—means smooth, easy lift that's easy on equipment. Check with your nearest Hercules distributor NOW for complete information.

HERCULES

Dump Bodies and Hydraulic Hoists

HERCULES STEEL PRODUCTS CORP. • GALION, OHIO

DOWEL ALIGNMENT BEING CHECKED BY SPIRIT LEVEL

HIGHWAY DEPARTMENTS REQUIRE DOWEL ALIGNMENT CHECKED BEFORE CONCRETE PLACING.
LACLEDE DOWEL SPACERS ALIGN DOWELS HORIZONTALLY, AND VERTICALLY ON ALL TYPES OF SUBGRADES AND MAINTAINS EXACT ALIGNMENT DURING CONCRETE POURING.
ELIMINATE COSTLY FIELD ADJUSTMENTS—USE LACLEDE DOWEL SPACERS.

LACLEDE STEEL COMPANY
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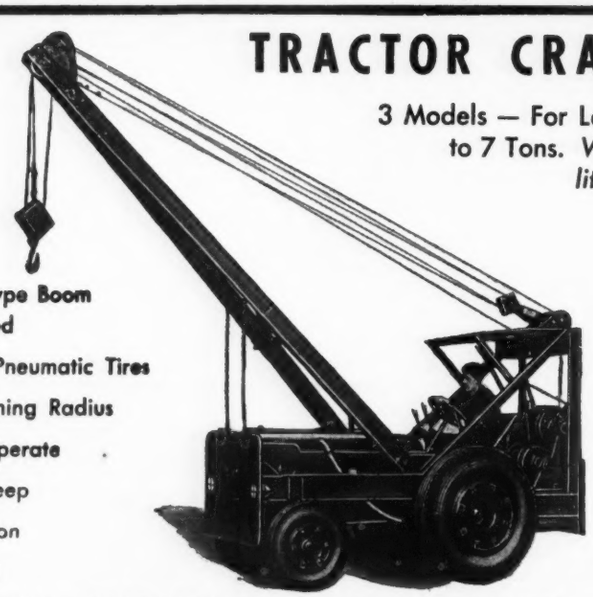
MERCER
"The Name that Carries Weight"
MATERIAL HANDLING EQUIPMENT

TRACTOR CRANES

3 Models — For Loads Up to 7 Tons. *Write for literature.*



Special Type Boom Designed
Solid or Pneumatic Tires
Short Turning Radius
Easy to Operate
Low Up-Keep
Clear Vision
Live Boom

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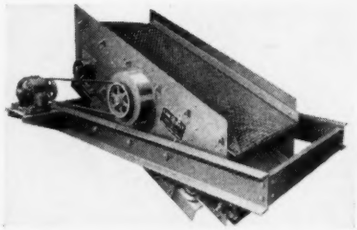

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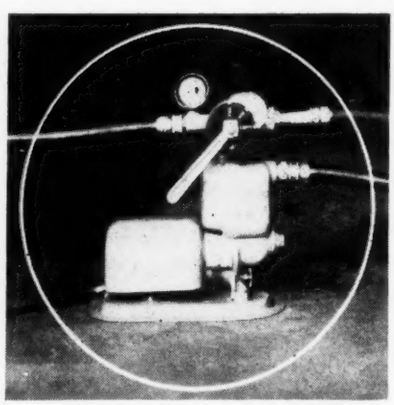
anism which imparts concentric or circular vibrating motion to all points of screening surfaces. It can be used for both medium and heavy duty sizing as well as for scalping and dewatering or rinsing operations. It is made with double or triple decks and in sizes ranging from 3x8 ft. to 6x14 ft. Single-deck screens can be provided by merely removing lower deck of standard double-deck screen. **— Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.**

PUMP—New lightweight pump for liquid-filling tractor and construction equipment tires to increase drawbar pull up to 60 percent, is available in either electric motor or



gasoline engine driven model. It will evacuate tire of liquid or air and then fill with water or calcium chloride solution. Optional equipment includes tank for use as air compressor. **— Gorman-Rupp Co., Mansfield, Ohio.**

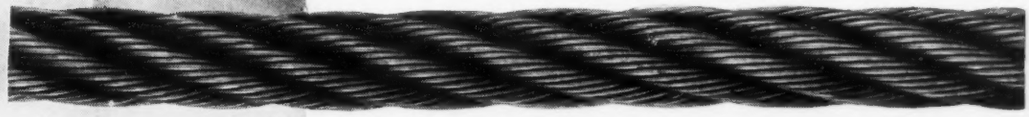
ADJUSTABLE SAW TRACK — Structural steel welded track, readily adjustable for use with Stanley safety saws W7, W8 and W9 for square, bevel or bevel mitre cuts, eliminates laying out and marking each piece of lumber. It can also be used for cutting slate, marble, etc., when proper abrasive wheel is used. Shipping weight is 13 lb. Other dimensions are: Overall length—37 in.; overall width—7¾ in.; maximum height under track—4½ in.; maximum width of wood possible to cut—17½ in.; overall height—5⁵⁄₁₆ in.; and overall track length—34¼ in. **—Stanley Electric Tools, New Britain, Conn.**

In Rope too — A Sound Heart Contributes to Longer Life

The quality of Wickwire Rope begins at the open hearth furnace where skilled metallurgists supervise the compounding of steel-making elements which give the finished product strength, stamina and toughness. Then, after the molten steel has taken form in ingot molds, the top of the steel block is discarded and only the sound heart of the ingot is used for rope wire.

From bloom -to billet -to rod -to wire -to finished rope, every step in the manufacture of Wickwire Rope is subject to our exacting controls. These controls, plus the service of distributors and Wickwire Rope engineers in all parts of the country, are your assurance of prompt service in solving your wire rope problems—are your assurance of quick delivery of the type of wire rope that will provide the utmost in performance, safety and long rope life.

Wickwire Rope is available in all sizes and constructions, both regular lay and WISSCOLAY *Pre*formed.



THIS 82-PAGE BOOK ON WIRE ROPE IS FREE—WRITE FOR YOUR COPY TODAY!

Thousands of wire rope users have found that the information packed in the pages of "Know Your Ropes" has made their work easier. It's full of suggestions on proper selection, application and usage of wire rope. It's easy-to-read and profusely illustrated. For your free copy, write—Wire Rope Sales Office, Wickwire Spencer Steel, Palmer, Massachusetts.

WICKWIRE ROPE

CF&I & SUBSIDIARIES

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL AND IRON CORPORATION

WIRE ROPE SALES OFFICE AND PLANT—Palmer, Mass. **EXECUTIVE OFFICE**—500 Fifth Avenue, New York 18, N. Y.

SALES OFFICES—Abilene (Tex.) • Boston • Buffalo • Chattanooga • Chicago • Denver • Detroit • Emlenton (Pa.) • Philadelphia • Tulsa • Fort Worth • Houston • New York

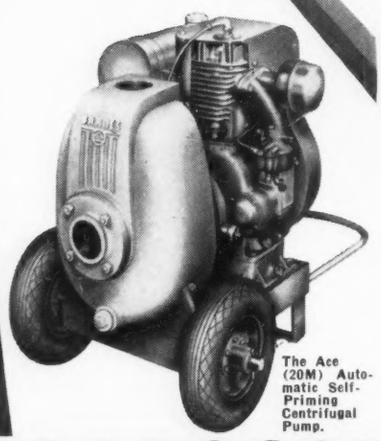
PACIFIC COAST—The California Wire Cloth Corporation, Oakland 6, California

STREAMLUXE Barnes LINE

Controlled Quality from Start to Finish
— that's "BARNES 33,000 for 1" PUMPS

Quality Control from raw materials to finished pumps decrees that only perfect materials and workmanship go into Barnes "33,000 for 1" Pumps. Under Barnes Quality Control, material selection and testing combine with precision machining and expert workmanship to produce a pump that delivers the most for your pumping dollar. Every pump large and small, is factory tested at various heads—to prove their performance. Remember, Barnes is the first choice of men who know pumps.

Consult your nearest Barnes Distributor or write, phone or wire.



The Ace (20M) Automatic Self-Priming Centrifugal Pump.

BARNES MANUFACTURING CO. Mansfield, Ohio
PRECISION WATER CONTROL PRODUCTS FOR OVER FIFTY YEARS

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Gas or Electric Concrete Vibrators (Catalog No. 689)

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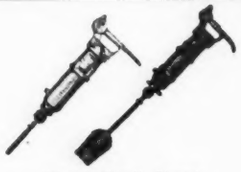

"Power-Blow" Electric Hammer and Spade (Catalog No. 688)

Gas or Electric Back-Fill Tampers (Catalog No. 699)

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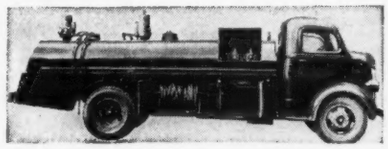
"Turn-A-Trowel" for trowelling concrete Sizes 48" or 34" (Catalog No. 685)

Send for illustrated catalog on any item to
MASTER VIBRATOR COMPANY
DAYTON 1, OHIO

ROOF COATING TANK TRUCK— Roof coating tank truck has truck body with tank capacity of 800 gal. of roof coating. It is equipped with Model 105 Davey Auto-Air compressor, driven directly from truck's engine, which furnishes power for transmittal of roof coating from



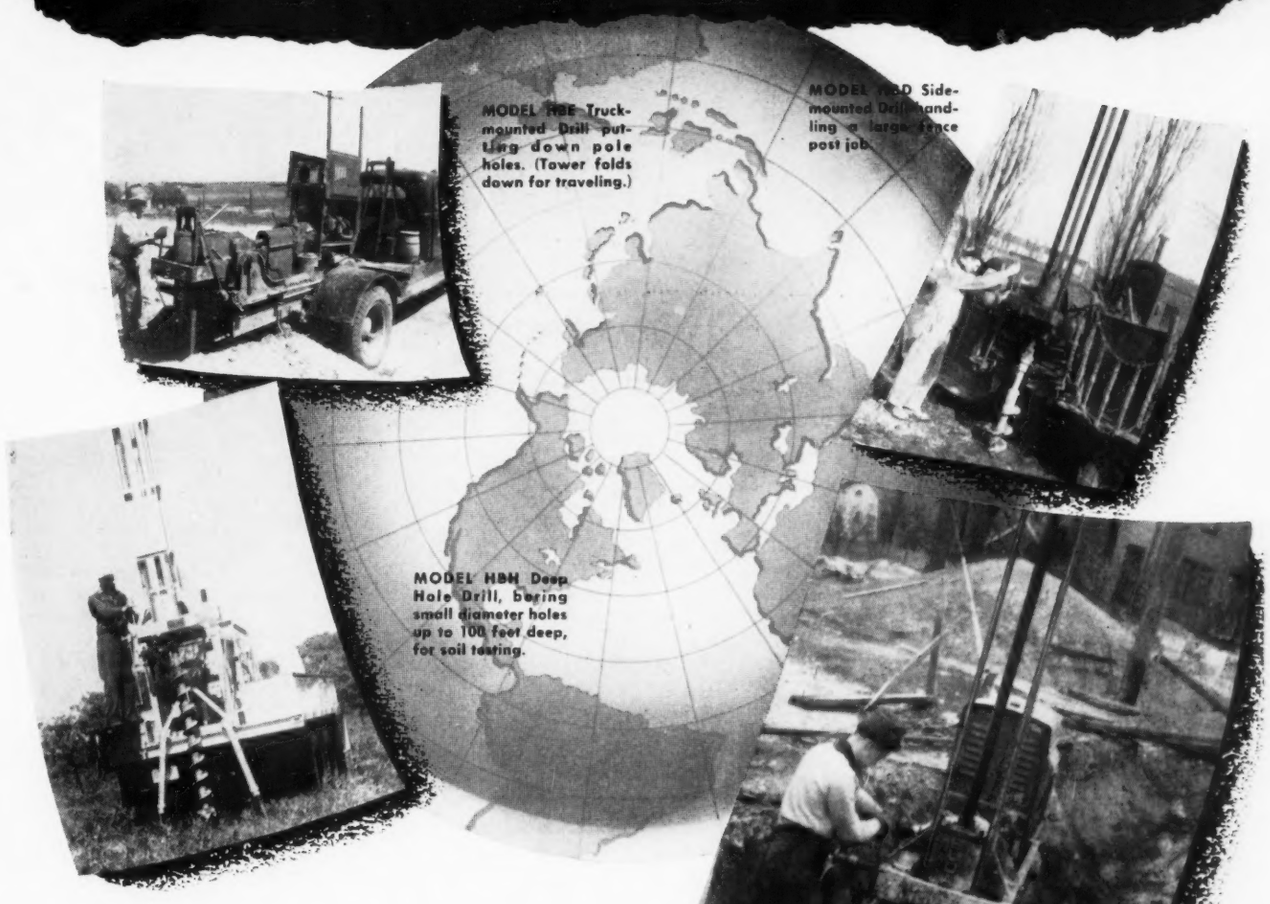
ground level to roofs of any height. Three-man crew can apply 350 to 400 squares of heavy asbestos fiber roof coating daily. Standard truck equipment includes 300 ft. of ¾-in. material hose and similar lengths of ½-in. air hose.—**Davey Compressor Co., Kent, Ohio,** in conjunction with **Acorn Protective Maintenance Co., Ware, Mass.**

BRIDGE RAMP—Designed for use with fork trucks on railroad sidings, new ramp has load capacity of 15,000 lb. and can be placed and secured by one person in less than

2 min. No physical lifting is required as ramp is equipped with handles spaced to fork-lift tines. There is size and type to span gaps from 5 to 58 in., with differential in heights up to 7 in. Riding surface is non-slip steel plate reinforced with shock plates at corners. — **Elizabeth Iron Works, P.O. Box 360, Elizabeth, N. J.**

PORTABLE FLIGHT CONVEYOR— New portable flight conveyor for conveying materials at steep inclines is known as Model CFL Tote-All, and is available in 14-ft. and 20-ft. lengths with respective maximum discharge heights of 10 and 14 ft. According to manufacturer, this new conveyor will handle many bulk materials at inclines up to 45 deg. Two-in. flights bolted to steel roller chain, on 1-ft. centers, assure minimum amount of product roll-back. Power is furnished by either electric motor or gasoline engine which will handle up to 60 tons per hr. of 50-lb. per cu. ft. material. Flight speed is 100 ft. per minute. Overall frame width is 13¾ in. and trough width is 10¼ in. Conveyor comes mounted on popular Trail-Hoist (combination trailer and hydraulic lifting device).—**Material Movement Industries, 310 S. Michigan Ave., Chicago 4, Ill.**

BUDA EARTH DRILLS . . . *in use all over the world*
. . . a type for every drilling job!



MODEL HBE Truck-mounted Drill putting down pole holes. (Tower folds down for traveling.)

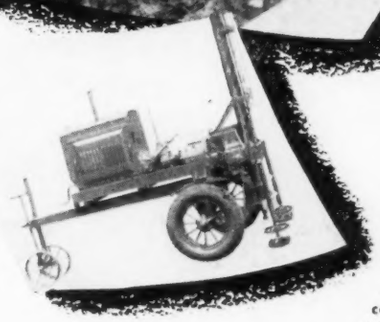
MODEL HBD Side-mounted Drill handling a large fence post job.

MODEL HBH Deep Hole Drill, boring small diameter holes up to 100 feet deep, for soil testing.

. . . backed by
world-wide parts and service facilities

Buda Earth Drills are being used successfully in all corners of the globe, in all types of soil, for rapid, efficient hole drilling. They are used in a great variety of hole-drilling operations, including Pole Line Construction, Bridge Building, Foundations, Pre-boring for Piles, Drainage and Sanitation, Tree Planting, Guard Rail, Road Construction and countless other applications. Buda Earth Drills are available in four models to meet your particular drilling requirements. They are capable of digging clean, uniform holes—in sizes up to 42" in diameter to a depth of 24 feet, and small diameter holes up to 100 feet in depth.

Write for literature.



(Above): MODEL HBB Trailer-mounted Drill preboring holes for concrete piling.

(Left): Close-up view of the MODEL HBB, a complete self-powered unit, can be towed with truck or tractor.

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15430 Commercial Avenue
HARVEY *(Chicago Suburb)* ILLINOIS

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Ready to ship to your job NOW — RELIANCE Construction Equipment offers you important improvements in complete Crushing, Screening, and Washing Plants. Look into the smooth operation and rugged construction of the RELIANCE LINE.

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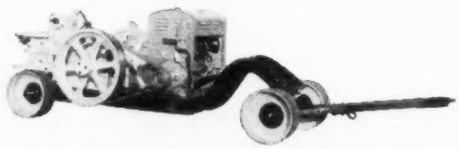

RELIANCE PRODUCTS

Rock Crushers, Bucket Elevators, Revolving Screens, Storage Bins, Pulverizers, Chip Spreaders, Heating Kettles, Bin Gates, Feeders, Belt Conveyors, Grizzlies, Air Separators, Sand & Gravel Spreaders, Wash Boxes.

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DISTRIBUTORS IN ALL PRINCIPAL CITIES OF U. S. A.

The Man In the Crane *Prefers* "AN OWEN BUCKET"

Like the head on a hammer, the proper bucket on the crane assures maximum operating efficiency of the machine.

Crane operators prefer working with OWEN BUCKETS. For faster digging, discharge and ease of handling, Owen Buckets are unexcelled.

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BRANCHES: New York, Philadelphia, Chicago, Berkeley, Calif.

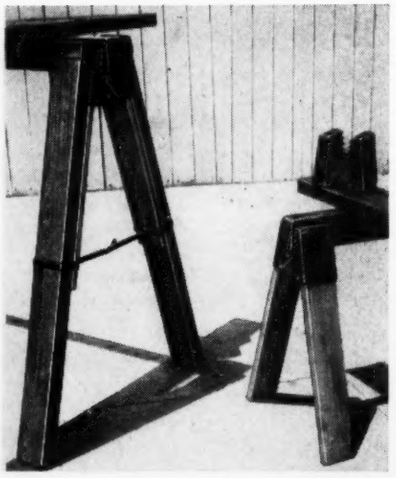
A MOUTHFUL AT EVERY BITE

STEERING CLUTCH PACKS — Seven new clutch facing and brake lining assemblies have been announced by Wellman company. Included are steering clutch packs for D2, D4, D6, D7, and D8 tractors,

clutch disks and brake band linings for No. 24 and No. 25 cable controls, and master clutch plates for No. 11 and No. 12 motor graders. Featured in each assembly is exclusive Velvetouch all-metal design.—**S. K. Wellman Co., 1374 E. 51st St., Cleveland, Ohio.**

ALUMINUM LADDER — Featherweight model aluminum ladder, designated as Model DLL, weighs slightly more than 1 lb. per ft. and is safe for 250-lb. load. As aluminum will not rot or rust, ladder can be washed or scalded frequently without impairing its strength. Rungs are corrugated for safe footing. Sizes range from 6-ft. to 16-ft. lengths, and two of 8, 10 and 12-ft. ladders can be joined to form extension ladder. — **Aluminum Ladder Co., Carbis St., Worthington, Pa.**

CLAMPS — New Panco saw horse clamp and scaffold clamp feature all-metal hinged cap that exerts bear trap action on cross piece. Saw horse clamp is made of 16-gage steel. It



weighs 7½ lb. per pair, including brace, and supports one ton. It uses 2x4-in. legs and cross piece.—**Pan-Continental Corp., Suite 610, Rives-Strong Building, 112 W. Ninth St., Los Angeles 15, Calif.**

These Ratings Take the GUESSWORK *Out of Buying!*

THERE'S no guesswork in buying meat. Government standards see to that. Just what to expect is disclosed by the gradings "AA," "A," "Commercial" and "Utility." Each cut of meat is stamped with these "ratings."

Similarly, the AGC rating plate takes the guesswork from pump buying. You can tell your pump's performance at a glance. The AGC rating plate is your built-in insurance policy that the pump you buy will deliver the capacity set up for it by the AGC Contractors Pump standards. Look for the AGC rating plate on your next pump. It's there for your protection. It means that, regardless of size, the pump you buy will deliver the amount shown on the plate.

BE SURE you get your copy of this Users' Pump Manual, prepared by the Contractors Pump Bureau. Contact your distributor or write any of the Companies listed below.

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(ESTABLISHED 1938)

Affiliated with

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BARNES MANUFACTURING CO.
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C. H. & E. MANUFACTURING CO.
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MARLOW PUMPS
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WORTHINGTON PUMP & MACHINERY CORP.
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STERLING MACHINERY CORP.
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CARVER PUMP COMPANY
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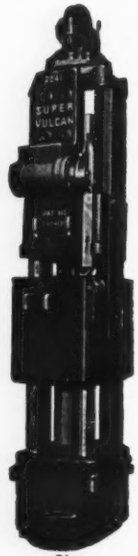
FOR PENETRATION

SUPER-VULCAN OPEN TYPE DIFFERENTIAL-ACTING PILE HAMMERS

18C, 30C, 50C and 80C

• In Super-Vulcan this symbol of power becomes an active, smashing force that sinks any kind of pile quickly and economically on the toughest job. That's where claims give way to facts, and that's where Super-Vulcan has proved and continues to prove its exceptional value through dependable performance that produces positive penetration.



Sizes 18C—30C—50C—80C meet all needs

For on the job Super-Vulcan delivers twice the usual number of powerful blows per minute on 25 to 35 per cent less steam per blow. And its rugged strength, long-time durability, simple design and ease of operation produce pile driving efficiency that means more piles down per dollar.

Find out about Super-Vulcan, the pile hammer that gets you greater penetration per blow. Write for full details.

VULCAN IRON WORKS Since 1852

331 North Bell Avenue

Chicago 12 ---Illinois

EQUIPMENT MEN

and Their Companies

C. L. Cummins, founder in 1919 of the Cummins Engine Co., Inc., Columbus, Ind., was elected chairman of the board of directors, and **J. I. Miller** was elected president at the 1947 annual meeting of stockholders and directors.

Dayton F. Rivas has returned to the Jaeger-Lembo Machine Corp., of New York, after four years with the U. S. Forces. He will represent the company in Dutchess, Putnam, Orange, Rockland and Sullivan counties.

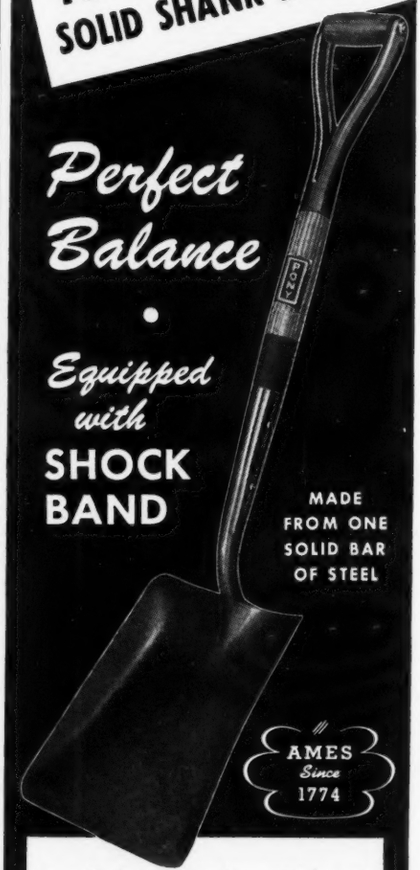
Caterpillar Tractor Co., Peoria, Ill., announces the promotion of **J. M. Davies** as associate director of research in administrative charge of the department and **R. C. Williams** as assistant director of research in charge of tractor and earthmoving projects. The present assistant directors of research **L. A. Blanc, W. L. H. Doyle, C. R. Maxwell** and **C. R. Schad** have been assigned additional duties in step with the expanding post-war necessity for advanced and efficient machinery.

George R. Wernisch, manager of the steel joist and roof deck division of Ceco Steel Products Corp., Chicago, Ill. was elected president of the Steel Joist Institute at the annual meeting of the board of directors. **James D. Maitland,** Colorado Builders Supply Co., Denver, Colo., was named vice-president.

J. Lester Perry, assistant to **Benjamin F. Fairless,** president of the United States Steel Corp. of Delaware, has been elected president of Columbia Steel Co., U. S. Steel's West Coast subsidiary, succeeding the late William A. Ross.

The name and address of Union Iron Works, Inc., has been changed to The Union Iron Works of New Jersey Company, Inc., Beacon, N. J.

"AMES" PONY FEATHERWEIGHT SOLID SHANK SHOVELS



Perfect Balance

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Equipped with SHOCK BAND

MADE FROM ONE SOLID BAR OF STEEL

AMES Since 1774

1 — Blade is forged from solid bar of steel.

2 — "AMES" shock band protects and strengthens handle.

3 — High bend for perfect balance.

4 — Engineered to insure user completely satisfactory results.

Ask Your Jobber

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SHOVELS FORKS
SPADES HOES
SCOOPS RAKES
POST HOLE DIGGERS
AGRICULTURAL HANDLES

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AMES BALDWIN WYOMING CO.

Parkersburg, W. Va. North Easton, Mass.

IN THE SOUTHERN TRADITION

YOU know men who are Hermitage customers. Ask them *why* they stay with us year after year . . . why they always think of Hermitage *first* for every cement requirement.

Different men will phrase it different ways, according to their individual experiences, but all their answers will add up to this one big point: *"Hermitage never lets you down."*

We're proud of the Hermitage reputation for fulfilling every promise . . . for giving service that is quicker, more efficient, more friendly. And we're proud, too, that the Hermitage Cements we produce today cannot be surpassed in quality anywhere in the world.

Hermitage Portland Cement Company

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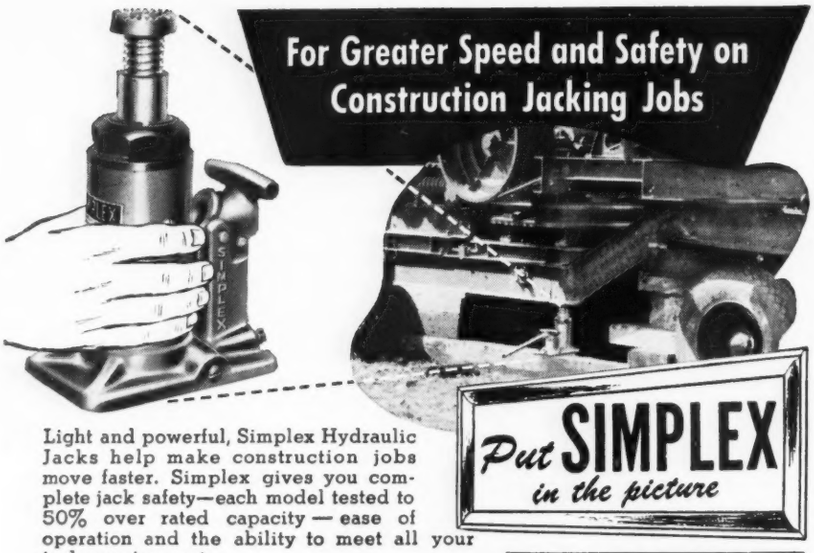
Hermitage Cements

PORTLAND—HIGH EARLY STRENGTH—AIR ENTRAINING—MASONRY



Light and powerful, Simplex Hydraulic Jacks help make construction jobs move faster. Simplex gives you complete jack safety—each model tested to 50% over rated capacity — ease of operation and the ability to meet all your jack requirements.

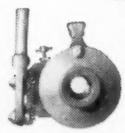
For tough pulling jobs, there's the Simplex-Jenny Center Hole Hydraulic Puller to cut man hours, save time and money. Whatever your Hydraulic Jack or Jenny need, you can find a Simplex to help you get more work done, faster and with greater safety.

TRY ONE FREE! Let Simplex Jacks or Jennys prove themselves on *your* job. Ask for 30-days free trial of the model you need, without obligation. Simplex Hydraulic Jacks are available in 3, 5, 8, 12, 20, 30, 50 and 100-ton capacities; Jennys in 30, 60, 80 and 100-ton capacities. For free trial, simply state capacity desired and send request on your letterhead to:

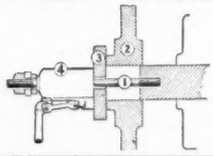
Simplex LEVER · SCREW · HYDRAULIC Jacks

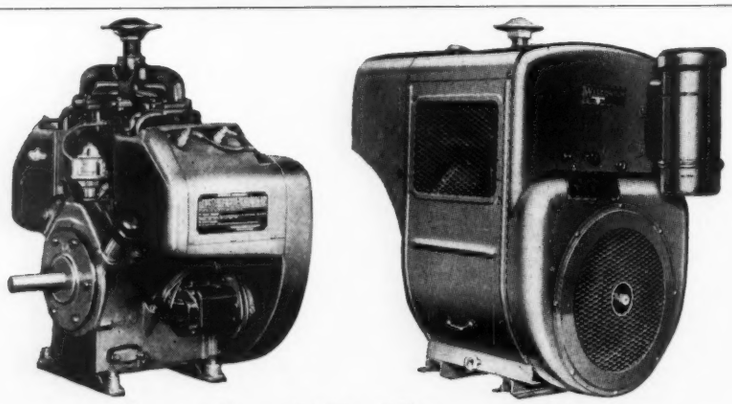
TEMPLETON, KENLY & CO.
1008 Central Avenue
Chicago 44, Illinois

SIMPLEX-JENNY CENTER HOLE HYDRAULIC PULLER



• Patented center hole principle makes the Simplex Jenny its own back-up to do tough pulling jobs fast and easy





Let this 20-Horse Team

Handle Your Heavy-Duty Power Jobs

Turning up 20.5 hp. at 2200 R.P.M. the Model VE-4 WISCONSIN Standard Air-Cooled Engine (left) and the Model VE-4 Complete Power Unit (right), can always be depended upon for continuous, heavy-duty operation in any kind of service, on any kind of equipment within their power range.

Positive, trouble-free AIR-COOLING; dynamically balanced crankshaft mounted on tapered roller bearings, *front* and *rear;* extra-long connecting rods; light weight pistons . . . these are features that you can bank on for top performance.

Specify Wisconsin Air-Cooled Engines for YOUR equipment . . . for most hp.-hours of service, at the lowest overall cost.

WISCONSIN MOTOR Corporation
MILWAUKEE 14, WISCONSIN
World's Largest Builders of Heavy Duty Air-Cooled Engines

Two important personnel changes were announced recently by the American Rolling Mill Co. **Logan T. Johnston** has been appointed general manager of sales and **T. F. Olt,** director of research. Election of three vice-presidents was also announced recently: **J. A. Ingwersen** was elected vice-president in charge of distribution; **C. H. Murray,** vice-president in charge of personal and public relations; and **H. H. Tullis,** vice-president and controller.

L. L. Lawrence has been appointed manager of the Gardner-Denver Co. branch office in Boston.

A one-story manufacturing unit and a two-story office building will be constructed at the Ypsilanti plant of the Ford Motor Co. Additions will be made on two sides of the present manufacturing structure.

The Calcium Chloride Association announces the moving of its offices from the Penobscott Bldg., Detroit to LaSalle Bldg., 1028 Connecticut Ave., N. W., Washington 6, D. C.

In a move to strengthen its export sales department, Kaiser Company, Inc., iron and steel division, Oakland, Calif., has announced the appointment of **W. J. Gleason** as export sales manager.

Albert E. Zeisel has become vice-president in charge of sales for the Eutectic Welding Alloys Corp., **W. Sigmund** is vice-president in charge of production and **T. H. Leston** has been appointed chief engineer of the corporation's new New York plant.

•

Inland Steel Co. has licensed Carnegie-Illinois Steel Corp. and other subsidiaries of U. S. Steel Corp. to manufacture Inland's Hi-Steel, and in return Carnegie-Illinois has licensed Inland to manufacture its Cor-Ten. Hi-Steel is a low alloy structural steel used extensively by railroads and is coming into broad use in the automobile industry.

Bath Iron Works Corp., of Bath, Me., has purchased all the outstanding stock of the Pennsylvania Crusher Co. of Philadelphia. The engineering personnel of the Pennsylvania Crusher Co. will remain with the company. **W. S. Newell,** president: **J. Wm. Schulze,** vice-president and treasurer; **A. H. Kretschmer,** secretary and assistant treasurer; and **S. D. Hartshorn,** acting general manager.

7 ways

to cut Sewage Disposal Costs with TRANSITE SEWER PIPE

IF YOU ARE SEEKING WAYS to lower sewage disposal costs, you will be interested in the opportunities for savings offered through the use of Transite* Sewer Pipe. Check these 7 important economies, all of them possible with Transite:

1. Lower excavation costs. Transite's low-friction coefficient (n=.010) provides greater flow capacity. This frequently permits flatter grades and shallower trenches with correspondingly lower excavation costs.

2. Lower handling costs. Long 13-foot lengths and light weight mean greater footage per truckload . . . less time required for unloading and lowering the pipe into the trench.

3. Lower pipe laying costs. Four classes of pipe, to meet a wide range of strength requirements for all loading conditions, minimize the need for costly concrete cradles. And Transite's long lengths mean fewer joints to assemble . . . less time for laying to line and grade.

4. Use of smaller diameter pipe. Transite's tight sleeve type joints are an effective safeguard against infiltration. Thus the total sewage load is reduced, which, coupled with Transite's higher flow capacity, makes possible the use of a smaller diameter pipe.

5. Minimum maintenance. Made of asbestos and cement combined by a special process, Transite Sewer Pipe is highly corrosion-resistant. Its tight joints safeguard against root trouble. And every length is factory-tested for strength and uniformity.

6. Reduced treatment costs. By cutting down on infiltration and reducing plant load, Transite helps reduce operating costs and conserve plant capacity for increased loads incident to future community growth.

7. Smaller treatment plants. Because Transite Sewer Pipe minimizes infiltration, plant capacity is more efficiently used. Where new plants are being designed, substantial savings in initial cost of construction and equipment may often be effected.

For further information, write for Brochure TR-21A. Johns-Manville, Box 290, New York 16, N.Y.

JM PRODUCTS

* Reg. U. S. Pat. Off.

In Concrete Vibration . . .
A FLEXIBLE SHAFT must be GOOD . . .
to withstand 7200 Shocks a minute!
That's what concrete vibration imposes on the vibrator drive—the grueling task of standing up under 7200 shocks every sixty seconds!
And here's why you can depend on the STOW Concrete Vibrator with STOW Flexible Shafting to give such outstanding performance. STOW Concrete Vibrators are the development of a pioneer in concrete vibration. STOW Flexible Shafting is the original flexible shaft design. Both are built to do the job right. STOW experience, STOW design, and STOW reputation guarantees you everything you can expect from concrete vibration.
STOW Flexible-Shaft Vibrators enable you to join lengths of shafting up to a maximum of 35 feet from motor, to reach the deepest form bottom. Each shaft joined by ball-bearing couplings.
THERE'S A STOW VIBRATOR for Every Concrete Job!
● 3 hp Vibrator for wide uses in harshest concrete. Variable speed.
● 1½ hp, general purpose.
● 1½ hp, direct driven. For use in light forms and shallow slabs.
Get all the facts Write for your copy of new pamphlet containing latest information on concrete vibrating units.
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For 70 years, Thomas built hoists have been designed for dependable, economical service.

Now available — in Stock

The Thomas patented "Band Friction" grips positively, releases easily—ELIMINATES OPERATOR FATIGUE. The Thomas patented "Back-Up" brake requires no power, sets and releases automatically. QUICKLY INTERCHANGEABLE PARTS, and PROMPT, DEPENDABLE SERVICE means Thomas Hoists *Keep the job going*. One, two or three drum hoists up to 100 H.P., gasoline or electric powered.

Write NOW for NEW FOLDER showing in detail the trips per hour normally obtainable with the various types of Thomas Hoists that are engineered to fit a particular job.

M. O. Stockland, Jr., former sales promotion manager of the Four Wheel Drive Auto Co., has been appointed manager of the newly consolidated sales promotion and advertising department.

United States Steel Supply Co. has promoted **George B. Parker,** former administrative assistant to the sales vice-president of this U. S. Steel subsidiary, to become general staff manager of the sales department. He will be responsible for the administration of advertising, commercial research, market development and price policy functions of the company in its nine operating districts. Two other promotions also were announced: **Linus E. Olson,** formerly staff assistant to the sales vice-president, was made manager of the advertising division and **William A. Crane** was made manager of the commercial research division.

The Heil Co., Milwaukee, Wis., has announced the appointment of **Leonard C. Anderson** as district manager of District 8, covering the Southwest states of California, Arizona and Nevada, with headquarters at Los Angeles, Calif.

The opening at Baltimore, Md., of an American Lumber and Treating Co. plant designed to alloy wood with creosote, Wolman salts and Minalith flameproofing salts has been announced.

Wheelco Instruments Co., Chicago, Ill., has appointed **Elmer Schneider** vice-president and director of engineering. **Joseph A. Reinhardt** becomes plant manager.

The Johnston Pump Co., Los Angeles, Calif., recently purchased the plant and facilities of the York Universal Manufacturing Co., York, Pa., to manufacture a complete line of domestic water systems. **Thomas W. Simmons, Jr.,** vice-president and general manager of the Jet division of the Johnston Pump Co., and **R. P. Porter,** sales manager, Los Angeles, are moving to York to take charge of operations. The company manufactures deep well turbines up to a capacity of 10,000 gpm., these pumps being used for irrigation, municipal water supplies and industries.

J. F. Bachman has been appointed director of Ford Motor Co's. industrial and marine sales department.

Ask the Drill Doctor about Steel

It's the drill doctor's job to keep rock drills on the job. He can tell you that rock-drill repair costs mount up fast when there's trouble with the drill steel. That's why the drill doctor seconds the motion when the blacksmith and the drill runners insist on Bethlehem Hollow. This "old reliable" steel is just what the drill doctor orders . . . it's a winner from every standpoint.

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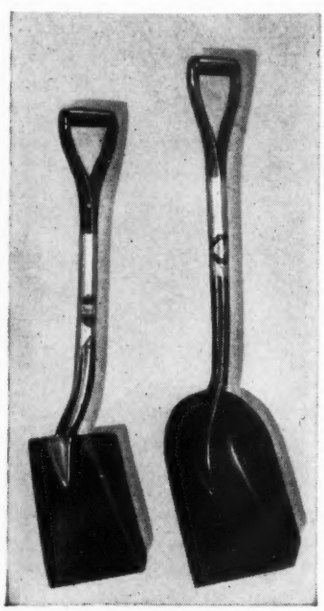
Le Roi Co., Milwaukee, Wisc., manufacturers of internal combustion engines, portable compressors, engine-generator sets and specialized mowing equipment, announces the purchase of the Cleveland Rock Drill Co. of Cleveland, Ohio. The purchase of this company, a division of The Cleveland Pneumatic Tool Co., substantially accelerates the rock drill manufacturing program announced earlier, coincidental with the establishment of Le Roi's Cleveland division. Included in the purchase were the manufacturing rights to all of the line of rock drills, the jigs, dies, fixtures, patterns, etc., as well as the complete inventory of parts for their manufacture. **Russ Morgan,** formerly secretary and sales manager of The Cleveland Rock Drill Co., who joined Le Roi over a year ago and who was instrumental in the organization of Le Roi's Cleveland division, will head the expanded facilities.

As a result of favorable action at stockholders' meeting, the consolidation of Flordia Portland Cement Co., Signal Mountain Portland Cement Co. and Trinity Portland Cement Co. to form General Portland Cement with headquarters at Chicago, Ill., has been announced.



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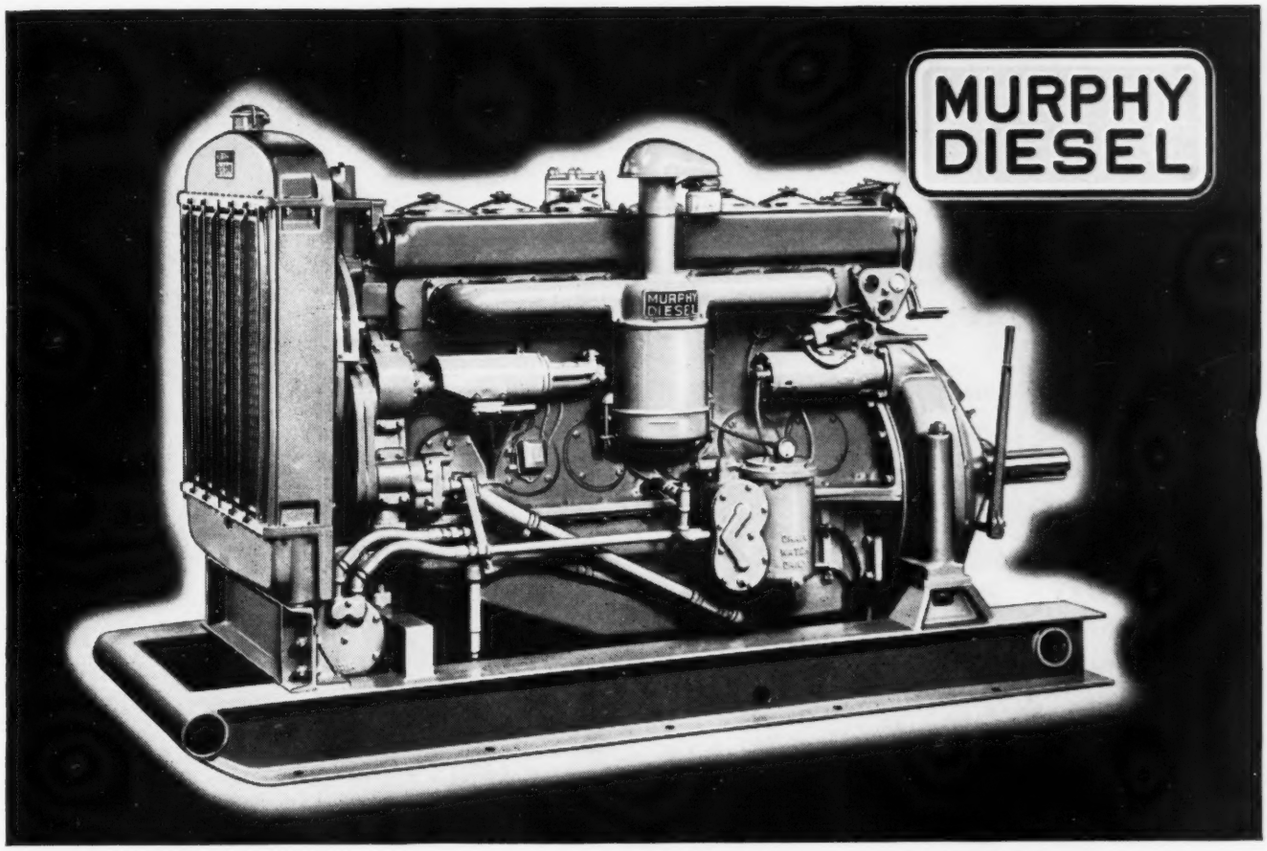

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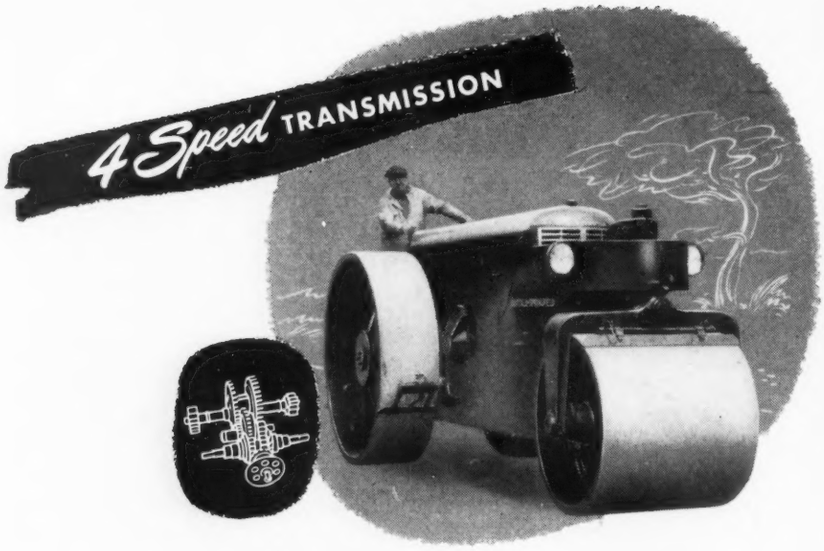

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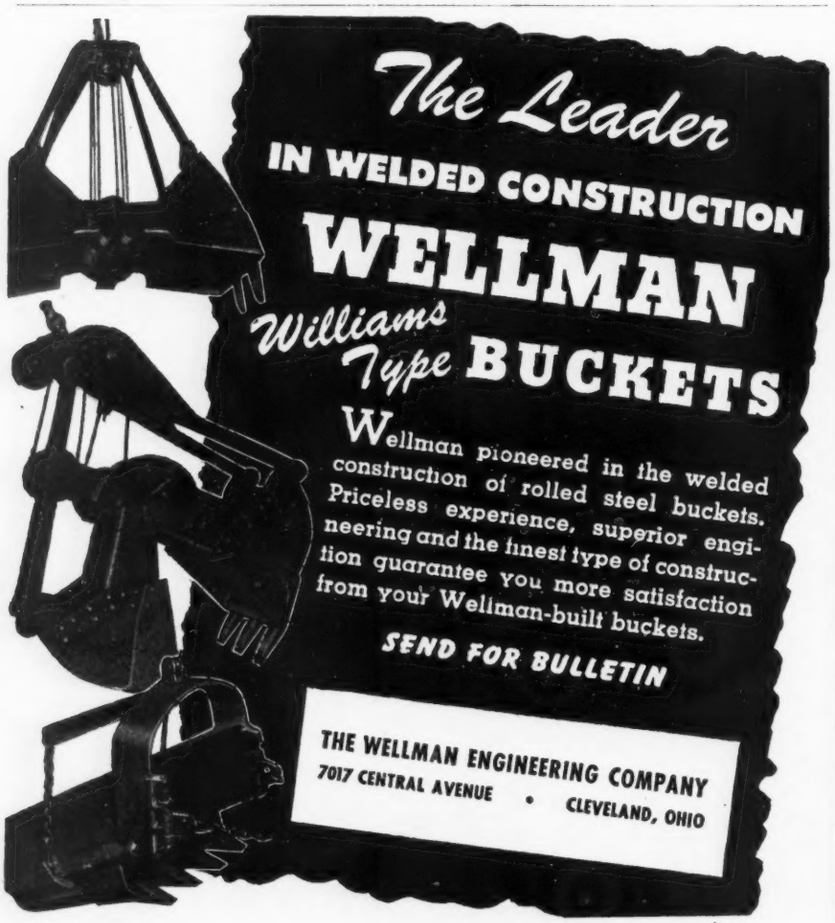
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The catalogs and bulletins reviewed below will keep you posted on latest developments in construction equipment and materials available for your use

DRAGLINE BUCKET—(20-p. booklet) Gives detailed information on dragline operation. How to select right size and type of bucket, how bucket operates, and how to use it and care for it for maximum production are few of subjects discussed and illustrated. — **Page Engineering Co., Clearing Post Office, Chicago 38, Ill.**

RENTAL RATES FOR CONSTRUCTION EQUIPMENT — (Fourth edition, 74 pp.) Provides schedule of prevailing rental rates based on overall average of rates throughout United States for specific pieces of equipment. Priced at $3.—**Associated Equipment Distributors, 1928 Eye St., N.W., Washington 6, D. C.**

TRUCKS AND TRAILERS — (18th edition, 52-p. booklet) Compiles results of comprehensive study of road laws regulating size and weight of trucks and trailers throughout United States.—**Four Wheel Drive Auto Co., Clintonville, Wis.**

MATERIALS HANDLING PUMP—(16-p. catalog) Features improvements made in Hydroseal pumps since war's end. — **Allen-Sherman-Hoff Co., 225 S. 15th St., Philadelphia 2, Pa.**

REFLECTIVE ROOF COATING — (Illustrated folder) Describes Gilsalume, insulating paint designed to provide low-cost roof protection and year-round weatherproofing. — **United Gilsonite Laboratories, Scranton 1, Pa.**

PUMPS—(180-p. catalog) Covers industrial lines of pumps, including numerous types of centrifugal pumps, sump pumps, cellar drainers, deep well turbine pumps, high pressure pumps, condensation return units, boiler feed pumps, mine pumps, Triplex pumps, "Turbo-Flo" pumps and rotary pumps.—**Deming Co., Salem, Ohio**

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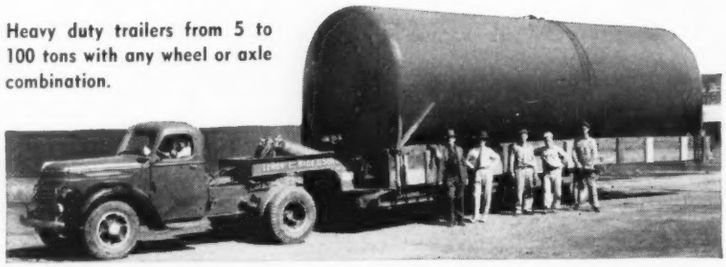

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PUMPS — (12-p. bulletin) Covers technical data, application pictures, cross-section drawings of parts, operation and design features, dimensional sketches and assembly procedure for Hydropress, which is designed to replace complex displacement - type pumps. — **Byron Jackson Co., Box 2017 Terminal Annex, Los Angeles 54, Calif.**

CHEMICAL CONTROL METHODS —(Illustrated folder) Tells how termites and Lyctus beetles operate and presents evidence to show effectiveness of "Penta" preservative.—**Chapman Chemical Co., 333 North Michigan Ave., Chicago 1, Ill.**

PORTABLE JET PUMPS — (4 - p. bulletin) Features simple, time-saving method of determining correct type of jet pump for user's individual requirements. Also included are charts and tables to facilitate proper selection over wide range of conditions. — **Jet Pump Division, Derbyshire Machine & Tool Co., 5208 Belfield Ave., Philadelphia 44, Pa.**

SURVEYING INSTRUMENTS—(12-p. bulletin) Gives comprehensive information and prices on transits and levels, including all specifications on instruments and accessories. Also available is 8th Catalog Edition, which contains 217 p. of information on all types of surveying, building and engineering instruments and accessories.—**David White Co., Milwaukee, Wis.**

POWER TOOLS — (36-p. catalog) Furnishes full details on new line of power tools, including drills, grinders, buffers, hydraulic presses, airguns, and blowers.—**Aristo Power Tools, Inc., 601 W. Washington Blvd., Chicago 6, Ill.**

STEEL—(8-p. newspaper) Illustrates end uses of steel with series of unusual action-type photographs. — **Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80, Ill.**

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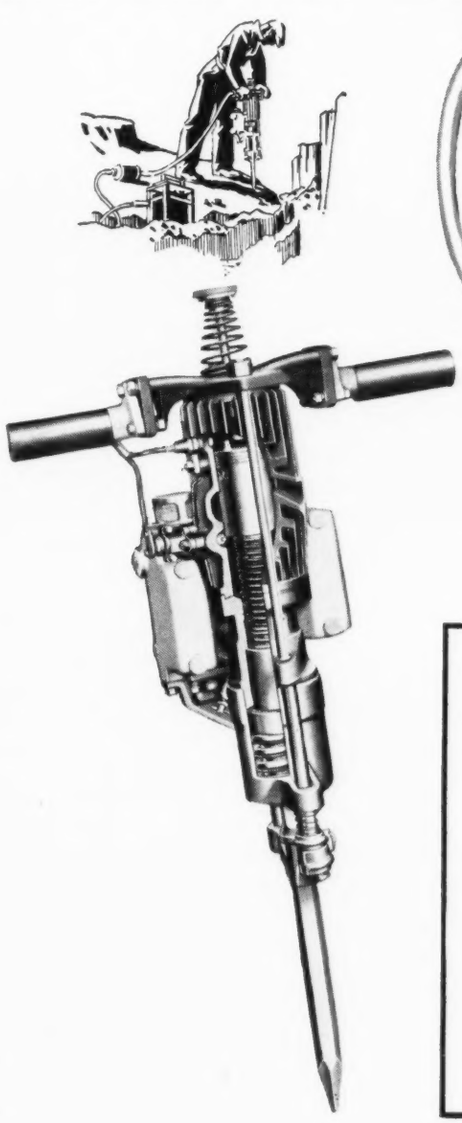

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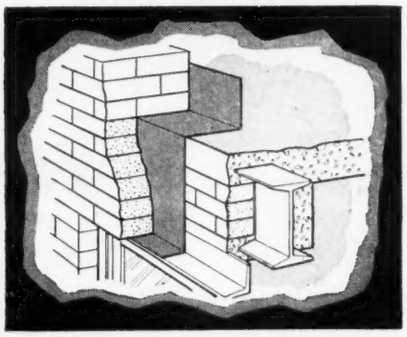

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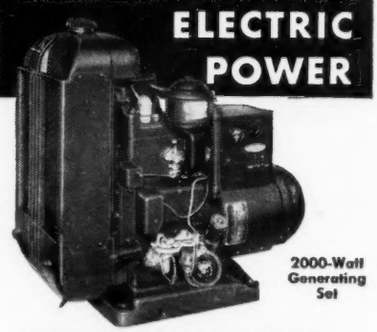

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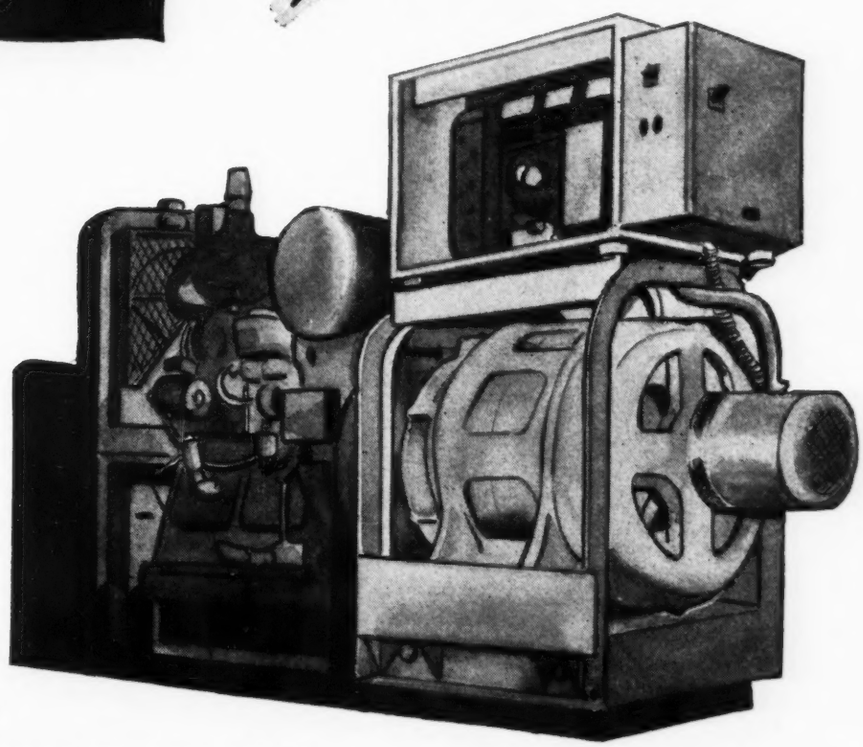

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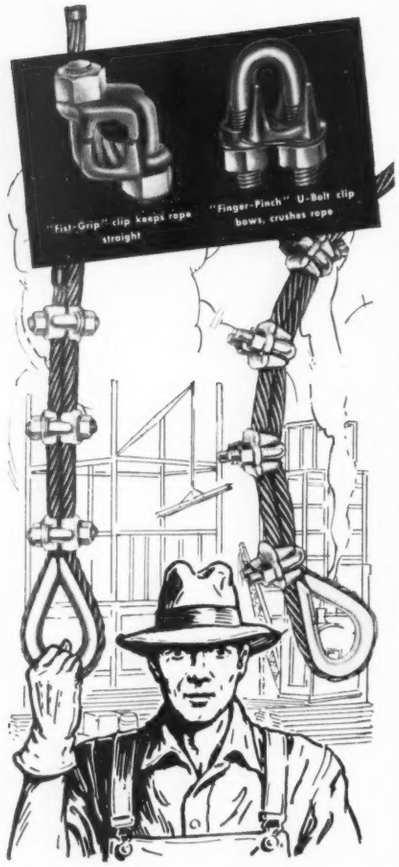

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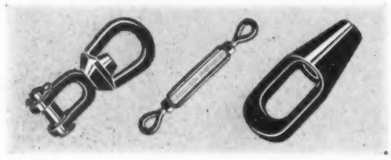

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Worthington-Ransome Distributors

Ala., Birmingham, Construction Equipment Co.
Montgomery, Burford-Toothaker Tractor Co.
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Ariz., Phoenix, Lee Redman Equipment Co.
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Little Rock, R. A. Young & Son
Cal., L. A. Golden State Equip. Co.
San Francisco, Coast Equip. Co.
Colo., Denver, Power Equipment Co.
Conn., Wallingford, Wilhelm-Davies Co., Inc.
Fla., Gainsville Constr. Equip. & Supply Co., Inc.
Fla., Miami, Allied Equip., Inc.
Orlando, Highway Equipment and Supply Co.
Tampa, Epperson & Company
Ga., Atlanta, Tractor & Machinery Company
Ida., Boise, Olson Manufacturing Co.
Ill., Chicago, Chicago Construction Equip. Co.
Ill., Chicago, Thomas Hoist Co.
Ill., Chicago, J. A. Roche
Iowa, Cedar Rapids, McNall Mach. & Supply Corp.
Ky., Harlan, Croushorn Equip. & Supply Co.
Louisville, Williams Tractor Co.
Mass., Cambridge, Field Machy. Co.
Mass. West Springfield, E. G. Edson Co., Inc.
Mich., Muskegon, Lakeshore Machy. & Supply Co.
Minn., Minneapolis, Phillippi-Murphy Equip. Co.
Miss., Jackson, Jackson Road Equip. Co.
Mo., Clayton, The Howard Corporation
Mo., Kansas City, Mach. & Supplies Co., Inc.
St. Louis, W. H. Reaves
Montana, Billings, Interstate Truck & Equip. Co.
Helena, Caird Eng. Works
Montana, Missoula, Miller Machinery Co.
Nevada, Elko, C. W. Paul Hardware and Machy. Co
N. Hampshire, Manchester, R.C. Hazelton Co., Inc.
N. J., No. Bergen, American Air Comp. Corp.
N. M., Albuquerque, Bud Fisher Co.
Roswell, Smith Machy. Co.
N. Y., Albany, Milton-Hale Machinery Co.
New York, Hodge & Hammond, Inc.
New York, Railroad Materials Corp.
Syracuse, Milton-Hale Mach. Co.
N. C., High Point, Smith Equip. Co.
N. D., Fargo, Smith Commercial Body Works, Inc.
Ohio, Cincinnati, Carroll-Edwards & Co.
Dayton, Carroll-Edwards & Co.
Ohio, Toledo, The Kilcorse Machy. Co.
Okla., Oklahoma City, Tattan-Douglass Equip. Co.
Oregon, Portland, Andrews Machinery
Pa., Wilkes-Barre, Ensminger & Co.
Mechaniesburg, Amer. Equip. Corp.
Philadelphia, Metalweld, Inc.
S. C., Columbia, Smith Equipment Co.
Tenn., Knoxville, Dempster Bros., Inc.
Memphis, Independent Tractor Co.
Nashville, Dempster Bros., Inc.
Tex., Amarillo, T. W. Carpenter Equip. Co.
Dallas, Shaw Equip. Co.
Texas, Houston, So. Texas Equip. Co., Inc.
San Antonio, Patten Machy. Co.
Tyler, D. M. McClure Equip. Co.
Utah, Salt Lake City, J. K. Wheeler Mach. Co.
Vt., Barre, A. M. Flanders, Inc.
Va., Richmond, Highway Machy. and Supply Co.
W. Va., South Charleston, Allied Equip. Co.
Wisc., Milwaukee, Drott Tractor Co., Inc.

Ransome Distributors

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Md., Baltimore, Stuart M. Christhilf & Co.
Mich., Detroit, Thomas G. Abrams
N. Y., Buffalo, Murray Equip. Co.
N. Y., Rochester, B-G Equip. Co.
O., Cleveland, H. B. Fuller Equip. Co.
Pa., Pittsburgh, Arrow Supply Company

Worthington Distributors

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Mich., Detroit, W. H. Anderson Co., Inc.
Flint, Gransden-Hall & Co.
N. Y., Buffalo, Dow & Co., Inc.
New York, Air Compressor Rental and Sales
O., Cleveland, Gibson-Stewart Co.
Pa., Allentown, H. N. Crowder, Jr., Inc.
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BUY BLUE BRUTES

Worthington Pump and Machinery Corp.

Worthington-Ransome Construction Equipment Division

Holyoke, Massachusetts

DEMOLITION BLOCKS

M-1, M-2, M-3 & M-4

CONTINUOUS SALE

Approximately 23,000,000 pounds
(Sale to Priority Groups closes July 30, 1947)

USES

All of these demolition blocks can be used in place of TNT or 40 to 60% dynamite except in underground operations. An added advantage is that the M-3 and M-4 blocks will give closer contact between the explosive and the object to be blasted. They are ideal for general demolition work, land clearing, excavating, ditching, quarrying, fire control, above ground mining, road construction, stump blasting, seismographic surveying, "blowing" out oil well fires and many other industrial uses. All blocks can be used under water.

★ ★ ★

This is a concurrent and continuous sale, 5% reserved for Federal Agencies and Priority Claimants for a period of 15 days. All orders received from priority claimants will be filled from the reserve. Non-priority orders will be filled as they are received.

This material is offered, as is, subject to inspection by purchaser at location, without expressed or implied warranty except as to title. WAA reserves the right to reject any or all offers, and to make awards in whole or in part. All items subject to prior withdrawal.

Purchasers of Demolition Blocks are required to observe all applicable laws regulating the sale, use, handling and storage of explosive materials.

Purchaser's order must state thereon: (a) "This order is subject to War Assets Administration Standard Conditions of Sale, and all other advertised terms and conditions, and no other terms or conditions should be binding on War Assets Administration", (b) Type of business and level of trade. Orders from veterans must show certification date, case number and location of certifying office.

Demolition blocks are high explosives which detonate with a quick, shattering blast. Their effectiveness is more *than twice that of the average commercial dynamite* and 25% more than that of T.N.T. They are relatively safe to handle and stable to store. They are *less sensitive to shock and friction than dynamite,* and can be burned (in small quantities) without exploding. The four types of demolition blocks are detonated by special electric or non-electric blasting caps or by detonating cord (primacord).

DESCRIPTION AND PACKAGING

M-1 Chain Demolition Blocks consist of eight tetrytol blocks each measuring 2 x 2 x 11 inches and weighing 2½ lbs. The blocks have a tetryl booster pellet in each end and are cast onto a single length of detonating cord. Each block is enclosed in asphalt impregnated paper and the chain is packed in a cloth haversack equipped with carrying strap. Two chains are packed to a wooden box.

M-2 Demolition Blocks are individual blocks identical with M-1 but they have a booster pellet and threaded cap well in each end. The M-2 blocks are packed the same as the M-1.

M-3 Demolition Blocks are 2¼ lb. blocks of moldable plastic explosive of composition C-2 or C-3. Each block is wrapped in glazed paper and inclosed in a cardboard carton. Eight blocks are packed in a cloth haversack; two haversacks in a wooden box.

M-4 Demolition Blocks are ½ lb. blocks of the same composition as the M-3. These are packed 100 to a wooden box.

Prices, F. O. B. location, are as follows:

M-1—75 cents per chain of eight blocks (2½ lbs. each)
M-2—10 cents each per 2½ lb. block
M-3—10 cents each per 2¼ lb. block
M-4—3 cents each per ½ lb. block
Minimum Quantities—1,500 lbs.

This material is available for immediate sale and delivery to all classes of purchasers at the following War Assets Administration Regional Offices in the approximate quantities. Offers to purchase may be made at any WAA Customer Service Center or by letter, wire or personal visit to any of the Regional Offices listed. If your offer is written, mark your envelope "Offer to Purchase Demolition Blocks, A-127".

WAA OFFICE	M-1	M-2	M-3	M-4
Birmingham	525,031 lbs.	430,922 lbs.	—	—
Chicago	716,720 lbs.	44,707 lbs.	—	—
Cincinnati	492,520 lbs.	1,056,250 lbs.	50,965 lbs.	—
Denver	2,731,130 lbs.	143,720 lbs.	643,964 lbs.	—
Grand Prairie	116,560 lbs.	45,772 lbs.	376,679 lbs.	—
Los Angeles	1,682,580 lbs.	870,500 lbs.	474,480 lbs.	—
Minneapolis	1,111,960 lbs.	1,664,320 lbs.	—	—
Nashville	194,440 lbs.	1,189,640 lbs.	804,093 lbs.	—
New York	202,165 lbs.	164,945 lbs.	610,636 lbs.	1,327 lbs.
Omaha	1,335,110 lbs.	278,930 lbs.	316,946 lbs.	—
Philadelphia	352,225 lbs.	384,845 lbs.	—	1,896 lbs.
Portland	592,260 lbs.	877,880 lbs.	—	—
Salt Lake City	676,105 lbs.	1,843,563 lbs.	4,576 lbs.	946 lbs.
San Francisco	3,220 lbs.	17,860 lbs.	27,648 lbs.	—
St. Louis	102,172 lbs.	—	—	—
	10,834,198 lbs.	9,013,804 lbs.	3,312,897 lbs.	4,169 lbs.

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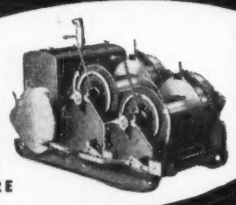

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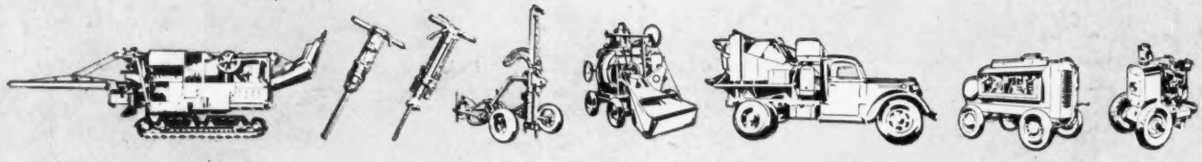

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